H1569

0056616

Eberline Services W.O. No. R1-11-016-7132 Bechtel Hanford Inc. SDG H1569

Case Narrative

Page 1 of 1

1.0 GENERAL

Bechtel Hanford Inc. (BHI) Sample Delivery Group H1569 was composed of one water sample designated under SAF No. B02-007 with a Project Designation of: 200 Area Source Characterization 200-CS-1 OU – QC Sampling.

The sample was received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to BHI via e-Fax on December 20, 2001.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analyses

EDMC

No problems were encountered during the course of the analyses.

Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Melissa C. Mannion Program Manager

Date

SAMPLE DELIVERY GROUP H1569

SDG 7132 Contact Melissa C. Mannion

SAMPLE SUMMARY

Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG H1569</u>

CLIENT SAMPLE ID	LOCATION	MATRIX LEVEL	LAB SAMPLE ID	SAF NO	CHAIN OF CUSTODY	COLLECTED
B13CT0	200 East & West	WATER	R111016-01	802-007	B02-007-03	10/31/01 15:00
Method Blank		WATER	R111016-03	B02-007		
Lab Control Sample		WATER	R111016-02	B02-007		
Duplicate (R111016-01)	200 East & West	WATER	R111016-04	B02-007		10/31/01 15:00

SAMPLE SUMMARY
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SUMMARY DATA SECTION
Page 3

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CS
Version 3.06
Report date 12/20/01

SAMPLE DELIVERY GROUP H1569

SDG	7132	
Contact	Melissa C. Mannion	

QC SUMMARY

Client	<u>Hanford</u>	
Contract	No. 630	
Case no	SDG_H1569	ļ

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX SOL	SAMPLE DS AMOUNT	BASIS AMOUNT	DAYS SI			DEPARTMENT SAMPLE ID
7132	B02-007-03	в13СТО	WATER	2.0 L		11/02/01	S	R111016-01	7132-001
		Method Blank Lab Control Sample Duplicate (R111016-01)	WATER WATER WATER	2.0 L		11/02/01	2	R111016-03 R111016-02 R111016-04	7132-003 7132-002 7132-004

QC SUMMARY Page 1 SUMMARY DATA SECTION Page 4

Lab id TMANC Protocol Hanford Version Ver 1.0 Form DVD-QS Version 3.06 Report date 12/20/01

SAMPLE DELIVERY GROUP H1569

SDG	7132		
Contact	<u>Melissa</u>	<u>c.</u>	Manni on

PREP BATCH SUMMARY

Client	Hanford
Contract	No. 630
Case no	SDG H1569

			PREPARATIO	ERROR			- PLA	NCHETS A	ANALYZ	'ED	QUALI-
TEST	MATRIX	METHOD	BATCH	2σ %	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG MS/ORIG	FIERS
Gas 93A	Proportion WATER	nal Counting Gross Alpha in Water	7012-130	20.0	1			1	1	1/1	
93B	WATER	Gross Beta in Water	7012-130	15.0	1			1	1	1/1	

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.

Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

PREP BATCH SUMMARY
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Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 12/20/01

EBERLINE SERVICES/RICHMOND SAMPLE DELIVERY GROUP H1569

SDG 7132
Contact Melissa C. Mannion

WORK SUMMARY

Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG H1569</u>

CLIENT SAMPLE I	D	MATRIX	LAB SAMPLE IS COLLECTED)		SUF-				
CUSTODY	SAF No		RECEIVED	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD
В13СТО			R111016-01	7132-001	93A/93		12/18/01	12/20/01	мсм	Gross Alpha in Water
200 East & West 802-007-03	B02-007	WATER	10/31/01 11/02/01	7132-001	938/93		12/18/01	12/20/01	MCM	Gross Beta in Water
Method Blank			R111016-03	7132-003	93A/93		12/18/01	12/20/01	MCM	Gross Alpha in Water
		WATER		7132-003	93B/93		12/18/01	12/20/01	MCM	Gross Beta in Water
	B02-007						_			
Lab Control Sam	ple		R111016-02	7132-002	93A/93		12/20/01	12/20/01	мсм	Gross Alpha in Water
	B02-007	WATER		7132-002	938/93		12/20/01	12/20/01	MCM	Gross Beta in Water
Duplicate (R111	016-01)		R111016-04	7132-004	93A/93		12/19/01	12/20/01	MCM	Gross Alpha in Water
200 East & West		WATER	10/31/01 11/02/01	7132-004	93B/93		12/19/01	12/20/01	MCM	Gross Beta in Water

TEST	SAF NO	COUNTS	OF TESTS BY S		RE BLANK	LCS	DUP SPIKE	TOTAL
93A/93	802-007	Gross Alpha in Water	900.0_ALPHABETA_GPC	1	1	1	1	4
938/93	802-007	Gross Beta in Water	900.0_ALPHABETA_GPC	1	1	1	1	4
TOTALS				2	2	2	2	8

WORK SUMMARY
Page 1
SUMMARY DATA SECTION
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Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CWS
Version 3.06
Report date 12/20/01

EBERLINE SERVICES/RICHMOND SAMPLE DELIVERY GROUP H1569

R111016-03

METHOD BLANK

Method Blank

	7132 Melissa C. Mannion	Client/Case no Contract	SDG_H1569
Lab sample id Dept sample id		Client sample id Material/Matrix SAF No	 WATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587-46-1	-0.148	1.2	2.7	3.0	U	93A
Gross Beta	12587-47-2	-6.50		7.6	4.0	U	93B

200 Area Source Chara. 200-CS-1 OU

QC-BLANK 40414

METHOD BLANKS
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Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 12/20/01

EBERLINE SERVICES/RICHMOND SAMPLE DELIVERY GROUP H1569

R111016-02

LAB CONTROL SAMPLE

Lab Control Sample

SDG 7132	Client/Case no <u>Hanford</u> <u>SDG H1569</u>
Contact Melissa C. Mannion	Case no <u>No. 630</u>
Lab sample id <u>R111016-02</u> Dept sample id <u>7132-002</u>	Client sample id <u>Lab Control Sample</u> Material/Matrix <u>WATER</u> SAF No <u>B02-007</u>

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	221	15	3.3	3.0		93A	200	8.0	110	64-136	70-113
Gross Beta	228	12	8.9	4.0		938	218	8.7	105	74-126	70-130

200 Area Source Chara. 200-CS-1 OU

QC-LCS 40413	
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LAB CONTROL SAMPLES
Page 1
SUMMARY DATA SECTION
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Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 12/20/01

EBERLINE SERVICES/RICHMOND SAMPLE DELIVERY GROUP H1569

R111016-04

DUPLICATE

B13CT0

SDG 7132 Contact Melissa C. Mannion		Client/Case no <u>Hanford</u> <u>SDG H1569</u> Case no <u>No. 630</u>
DUPLICATE	ORIGINAL	
Lab sample id <u>R111016-04</u>	Lab sample id <u>R111016-01</u>	Client sample id <u>B13CTO</u>
Dept sample id 7132-004	Dept sample id <u>7132-001</u>	Location/Matrix 200 East & West WATER
	Received <u>11/02/01</u>	Collected/Volume 10/31/01 15:00 2.0 L
		Custody/SAF No B02-007-03 B02-007

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	ROL pCi/L	QUALI- FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI- FIERS	RPD %	30 PROT
Gross Alpha	0.136	0.57	1.1	3.0	U	93A	-0.248	0.48	1.0	U	-	
Gross Beta	0.530	1.5	2.4	4.0	U	93B	0.516	1.4	2.3	U	-	

200 Area Source Chara. 200-CS-1 OU

QC-DUP#1	40415			

DUPLICATES
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Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 12/20/01

EBERLINE SERVICES / RICHMOND SAMPLE DELIVERY GROUP H1569

R111016-01

DATA SHEET

B13CT0

	7132 Melissa C. Mannion	Client/Case no Contract		SDG H1569
Lab sample id Dept sample id Received		Client sample id Location/Matrix Collected/Volume Custody/SAF No	200 East & West 10/31/01 15:00 2.	WATER 0 L

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha Gross Beta	12587-46-1 12587-47-2	-0.248 0.516	0.48	1.0	3.0 4.0	บ บ	93A 93B

200 Area Source Chara. 200-CS-1 OU

DATA SHEETS
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SUMMARY DATA SECTION
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Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 12/20/01

SAMPLE DELIVERY GROUP H1569

Test <u>93A</u> Matrix <u>WATER</u> SDG 7132

Contact Melissa C. Mannion

METHOD SUMMARY

GROSS ALPHA IN WATER
GAS PROPORTIONAL COUNTING

Client <u>Hanford</u>
Contract <u>No. 630</u>
Contract <u>SDG</u> H1569

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	TEST FIX	PLANCHET	Gross	Alpha
Preparation batch 7012-	130				
B13CT0	R111016-01	93	7132-001	U	
BLK (QC ID=40414)	R111016-03	93	7132-003	U	
LCS (QC ID=40413)	R111016-02	93	7132-002	ok	
Duplicate (R111016-01)	R111016-04	93	7132-004	-	U

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST			-	DILU- TION	RESID mg		-	 		PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7012-	130 2 <i>σ</i> pr	ер егг	or 20.0 %	Reference	Lab I	Noteboo	k 7012	pg.	130					
B13CT0	R111016-01	93	1.0	0.300			4		100		48	12/06/01	12/18	GRB-110
BLK (QC ID=40414)	R111016-03	93	2.7	0.100			22		100			12/06/01	12/18	GRB-112
LCS (QC ID=40413)	R111016-02	93	3_3	0.100			22		100			12/06/01	12/20	GRB-114
Duplicate (R111016-01) (QC ID=40415)	R111016-04	93	1.1	0.300			4		100		49	12/06/01	12/19	GRB-115
Nominal values and limit	ts from metho	d	3.0	0.100			5-250	0	100		180			

	PROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
		CP-060	Soil Preparation, rev 3
		CP-070	Soil Dissolution, < 1.0g Aliquot, rev 4
		CP-170	Soil Preparation for Direct Gross Alpha and Gross
			Beta Counting, rev 3
-			

AVERAGES ± 2 SD MDA 2.0 ± 2.3

FOR 4 SAMPLES RESIDUE 13 ± 21

METHOD SUMMARIES
Page 1
SUMMARY DATA SECTION
Page 11

Lab id TMANC

Protocol Hanford

Version Ver 1.0

Form DVD-CMS

Version 3.06

Report date 12/20/01

SAMPLE DELIVERY GROUP H1569

Test 93B Matrix WATER
SDG 7132
Contact Melissa C. Mannion

METHOD SUMMARY GROSS BETA IN WATER GAS PROPORTIONAL COUNTING

Client <u>Hanford</u>
Contract <u>No. 630</u>
Contract <u>SDG H1569</u>

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX PLANCHET	Gross	Beta
Preparation batch 7012-	130				
B13CT0	R111016-01	93	7132-001	U	
BLK (QC ID=40414)	R111016-03	93	7132-003	บ	
LCS (QC ID=40413)	R111016-02	93	7132-002	ok	
Ouplicate (R111016-01)	R111016-04	93	7132-004	-	U

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX p	MD/ Ci/l		PREF	DILU-	RESID mg	EFF %		FWHM keV	 	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7012-	130 2σ p	rep er	ror 15.0	×	Reference	Lab	Notebook	7012	pg.	130					
B13CT0	R111016-01	93		2.3	0.300			4		100		48	12/06/01	12/18	GR8-110
BLK (QC ID=40414)	R111016-03	93		7.6	0.100			22		100			12/06/01	12/18	GRB-112
LCS (QC ID=40413)	R111016-02	93	_	8.9	0.100			22		100			12/06/01	12/20	GRB-114
Duplicate (R111016-01) (QC ID=40415)	R111016-04	93		2.4	0.300			4		100		49	12/06/01	12/19	GRB-115
Nominal values and limi	ts from metho	od		4.0	0.100			5-25)	100		 180			

	PROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
		CP-060	Soil Preparation, rev 3
	1	CP-070	Soil Dissolution, < 1.0g Aliquot, rev 4
J		CP-170	Soil Preparation for Direct Gross Alpha and Gross
			Beta Counting, rev 3

AVERAGES ± 2 SD MDA 5.3 ± 6.9

FOR 4 SAMPLES RESIDUE 13 ± 21

METHOD SUMMARIES
Page 2
SUMMARY DATA SECTION
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Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 12/20/01

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST B02-007-03											ત 1		
Collector Watson, D/Bowers DL							Project Coordinator TRENT, SJ Price Code 7N				Data Turnaround			
Project Designation 200 Area Source Characterization 200-CS-1 OU - QC Samplin		ng Location East & West H/	569	(7)	137	.)	SAF No. B02-007			Air Quality 🗆 45 D			Days	
Ice Chest No. ERC96.030	Field L EL1:	ogbook No. 551			COA Method of Shipment B20CS1673C Fed Ex				ment					
Shipped To (TMA)RECRA	Offsite Property No. 4 02 0 100				5			Bill of Lading	ALE BULN	No.7954 - 5			578	3
POSSIBLE SAMPLE HAZARDS/REMARKS Samples did not originate in radiological controlled area. No total activity associated with sample/samples.		Preservation	HCl or H2SO to pH <2 Co			HNO3 to pH <2 aG	H2SO41 <2 Coc	NAC /	Z-(Ac+NaC to pH >9 C		HCl orli to pH k	12SO4 2 Coo	31.01	
Special Handling and/or Storage		Type of Container										•		
·		No. of Container(s)	3	2		1		1	1	2				
		Volume	40mL	1000	OmiL	100 (m)	15000	that 1000mit	500mL	, 1000mL	40	nL		
Sample analysis			VOA - 8260 (TCL); VOA 8260A (Ad- On) (1- Propunol, Ethan 1)	- 8270A	(Addr Hbutyl	After item (F) in Special Instructions.	NO2/N 353 Amuse 350	l: Special Instructions.	Sulfides - 9	030 Gross Alpha; Gross Beta	VOA (TCL): 8260/A On Prop Eth	VOA - (Add- {1-	1	·
Sample No. Matrix * Sam	nple Date	Sample Time												
B13CT0 WATER 0-71	. ره	100/								X/	1			
B13CT1 WATER			<u> </u>											
WAD 10-3(-01	•										<u> </u>			
,						·	<u> </u>		<u> </u>		<u> </u>			ļ
			.			<u> </u>	<u> </u>		<u> </u>					
Relinquished By/Removed From Jay DeterTime Receipt Course Acres Boners 10-31-0//50 R		odin D 3720 10~11-		30	** Li	ne ERC acknow	measure wiedges	ONS pH within 24 hours o the 48-hour holding t t Decune as a TIC if	ime will not	be met for Nitrat		PA meti	hod 300.0.	Matrix * S=Soil SB=Sofiment SO=Solid
Relinquished By/Removed From Date/Time Of Received Relinquished By/Removed From Pyte/Time Of Received Relinquished By/Removed From Of Pyte/Time Of Of Received Relinquished By/Removed From Of Received Relinquished By/Removed Relinquished Re		<u> </u>	pte Time C	01	4CPA	totale - 6010A	(Supert	pertrees) (Arsonia, E roce Add On) (Beryl ride, Fluoride, Nitrat	lient Coppe	r, Nickel, Vanadi	m. Zine	├ ─		Si=Shedge W = Water O=Oil A=Air
Relinquished By/Removed From Date/Time Rece	red in SCA-2 D	1/-6	1130		amples sto	red in	Ref.#2Aat on 60/81/6	the 3728	· }	it ber (m)	u <i>c</i> .,	10.3101	D8=Drum Solids DL=Drum Liquids T=Tissue Wp=Wips L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From Date/Time Rece	ived By/Stor	HI KILAN CONTRACT						PT 1-0	វា					
LABORATORY Received By SECTION			Title						· · · · · · · · · · · · · · · · · · ·	 -	Đ	ate/Time	<u></u>	
FINAL SAMPLE Disposal Method DISPOSITION						Disp	osed By					E	Date/Time	

SAMPLE RECEIPT CHECKLIST

Client: Bechtel Hanford Inc. Date/Time received 11-02-01 9:20 Coc No. RO2 - 007-03 Container I.D. No. ERCGB-030 Requested TAT (Days) 45 P.O. Received Yes [] No (†	SAMPLE RECEIPT													
Container I.D. No. ERCGO D Requested TAT (Days) 45 P.O. Received Yes [] No [] INSPECTION	[2												
INSPECTION 1. Custody seals on shipping container intact? Yes [] No [] N/A [] 2. Custody seals on shipping container dated & signed? Yes [] No [] N/A [] 3. Custody seals on sample containers intact? Yes [] No [] N/A [] 4. Custody seals on sample containers dated & signed? Yes [] No [] N/A [] 5. Cooler Temperature: Packing material is: Wet [] Dry [] 6. Number of samples in shipping container: 7. Number of containers per sample: Yeach (Or see CoC) 8. Paperwork agrees with samples? Yes [] No [] 9. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels [] 10. Samples are: In good condition [] Leaking [] Broken Container [] Missing [] 11. Describe any anomalies:	coc No. B02 - 007-03													
INSPECTION 1. Custody seals on shipping container intact? Yes [] No [] N/A [] 2. Custody seals on shipping container dated & signed? Yes [] No [] N/A [] 3. Custody seals on sample containers intact? Yes [] No [] N/A [] 4. Custody seals on sample containers dated & signed? Yes [] No [] N/A [] 5. Cooler Temperature: Packing material is: Wet [] Dry [] 6. Number of samples in shipping container: 7. Number of containers per sample: Yeach (Or see CoC) 8. Paperwork agrees with samples? Yes [] No [] 9. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels [] 10. Samples are: In good condition [] Leaking [] Broken Container [] Missing [] 11. Describe any anomalies:	Container I.D. No. ERCGb -0 30 Requested TAT (Days) 45 P.O. Received Yes [] No	-												
2. Custody seals on shipping container dated & signed? Yes [] No [] N/A [] 3. Custody seals on sample containers intact? Yes [] No [] N/A [] 4. Custody seals on sample containers dated & signed? Yes [] No [] N/A [] 5. Cooler Temperature: Packing material is: Wet [] Dry [] 6. Number of samples in shipping container: 7. Number of containers per sample: Yeach (Or see CoC) 8. Paperwork agrees with samples? Yes [] No [] 9. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels [] 10. Samples are: In good condition [] Leaking [] Broken Container [] Missing [] 11. Describe any anomalies:														
3. Custody seals on sample containers intact? 4. Custody seals on sample containers dated & signed? Yes [] No [] N/A [] 5. Cooler Temperature: Packing material is: Wet [] Dry [] 6. Number of samples in shipping container: 7. Number of containers per sample: Yeach (Or see CoC) 8. Paperwork agrees with samples? Yes [] No [] 9. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels [] 10. Samples are: In good condition [] Leaking [] Broken Container [] Missing [] 11. Describe any anomalies:	1. Custody seals on shipping container intact? Yes [No [] N/A []												
4. Custody seals on sample containers dated & signed? Yes [] No [] N/A [] 5. Cooler Temperature: Packing material is: Wet [] Dry [] 6. Number of samples in shipping container: 7. Number of containers per sample: Y Lack (Or see CoC) 8. Paperwork agrees with samples? Yes [] No [] 9. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels [] 10. Samples are: In good condition [] Leaking [] Broken Container [] Missing [] 11. Describe any anomalies:	2. Custody seals on shipping container dated & signed? Yes [] No [] N/A []												
5. Cooler Temperature: Packing material is: Wet [] Dry [] 6. Number of samples in shipping container: 7. Number of containers per sample:	3. Custody seals on sample containers intact? Yes [/] No [] N/A []												
6. Number of samples in shipping container: 7. Number of containers per sample: 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	4. Custody seals on sample containers dated & signed? Yes [] No [] N/A [1												
7. Number of containers per sample: 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	5. Cooler Temperature: Packing material is: Wet [] Dry [.	-1												
8. Paperwork agrees with samples? Yes [] No [] 9. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels [] 10. Samples are: In good condition [] Leaking [] Broken Container [] Missing [] 11. Describe any anomalies: 13. Was P.M. notified of any anomalies? Yes [] No [] Date 14. Received by Wie [. Massim Date: [1-02/1] Time: 9:30 MM	6. Number of samples in shipping container:													
9. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels [] 10. Samples are: In good condition [] Leaking [] Broken Container [] Missing [] 11. Describe any anomalies: 13. Was P.M. notified of any anomalies? Yes [] No [] Date 14. Received by Wie [. Was Pate Date: 11-02/11 Time: 9:30 Am	7. Number of containers per sample: 2x each (Or see CoC)													
10. Samples are: In good condition [] Leaking [] Broken Container [] Missing [] 11. Describe any anomalies: 13. Was F.M. notified of any anomalies? Yes [] No [] Date 14. Received by	8. Paperwork agrees with samples? Yes [/ No []	Ì												
11. Describe any anomalies: 13. Was P.M. notified of any anomalies? Yes [] No [] Date 14. Received by	9. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels [T												
13. Was P.M. notified of any anomalies? Yes [] No [] Date	10. Samples are: In good condition [] Leaking [] Broken Container [] Missing [}												
14. Received by Chris f. Wasstas Date: 11-02/11 Time: 9:30 Am	11. Describe any anomalies:													
14. Received by Chris f. Wasstas Date: 11-02/11 Time: 9:30 Am														
14. Received by Date. 11.72 70 1	13. Was P.M. notified of any anomalies? Yes [] No [] Date													
	14. Received by Chrie 1. Maestas Date: 11-02/1 Time: 9:30 Am	_												
	Costostier Campio 110. Cpm (187)													
		<u> </u>												
on Chamber Ser. No Calibration date	on Chamber Ser. No Calibration date													
Survey Meter Ser No Calibration date	Survey Meter Ser No Calibration date													

Form SCP-01.2, 09-25-00 Previous editions of this form may be used.

DATA PACKAGE TRAVELER SHEET

SDG_NUM	DP_STATUS	US_START_DATE	US_END_DATE	COMMENTS
H1568	Delivery Group	11/2/01		Original chem data is filed in H1568, original chem inlcudes H1568 and H1571
	Final Data - Chemi	11/2/01	11/27/01	Chem - 11/27/01 (SV, VOA add-on, Diesel, Metals, Wet Chem, VOA)
•	Final Data - Radioc	11/2/01	11/20/01	Rad - 11/20/01 (GA, GB, GEA, Np, C14, Iso Thorium, Iso U); 11/19/01 (Total U, Iso Pu, GEA add-on);
	Login	11/20/01	11/28/01	Rad - 11/20/01; Chem - 11/28/01
	On Hold (Incomplet	11/20/01	11/27/01	Still need chem revd 11/27/01
	Priority Data - Che	11/2/01	11/21/01	Chem - 11/19/01 (SV, VOA add-on, Diesel, Metals, Wet Chem, PCBs); 11/21/01 (VOA)
	Priority Data - Radi	11/2/01		Rad - 11/17/01 (GA, GB, C14, Iso Thorium); 11/19/01 (Gamma Spec, Gamma Spec Add-on, Iso U, Total U, Iso Pu)
	Validation	11/29/01		7 Day TAT



Analytical Report

Client: TNU-HANFORD B02-007 H1569/H1576

W.O.#: 11343-606-001-9999-00

LVL#: 0111L258

Date Received: 11-02-01

INORGANIC NARRATIVE

1. This narrative covers the analyses of 1 water sample.

- 2. The sample was prepared and analyzed in accordance with the methods checked on the attached glossary.
- 3. Sample holding times as required by the method and/or contract were met with the exception of pH, Nitrate, Nitrite and Phosphate.
- 4. The cooler temperature was recorded on the chain of custody.
- 5. The method blanks were within the method criteria.
- 6. The Laboratory Control Samples (LCS) were within the laboratory control limits. The duplicate LCS were within the 20% Relative Percent Difference (RPD) control limit.
- 7. The matrix spike recoveries were within the 75-125% control limits; insufficient sample volume was submitted to perform a matrix spike for Sulfide.
- 8. The replicate analyses were within the 20% Relative Percent Difference (RPD) control limit.
- 9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Deputy Laboratory Manager

Lionville Laboratory Incorporated

11-15-0 i

njp\i11-258

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 14 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR WATER SAMPLE ANALYSIS

	EPA /600	SW846	OTHER
Acidity	305.1		
AlkalinityBicarbonateCarbonate	310.1		
BOD	405.1		5210B (b)
Ion Chromatography:			
Bromide / Chloride/ / Fluoride	/ 300.0	9056	
Nitrate Nitrite Phosphate	300.0	9056	
Sulfate Formate Acetate Oxalate	300.0	9056	
Chloride	325.2	9251	
Chorine, Residual	330.5 (mod)	-	
Cyanide, Amenable to Chlorination	335.2	9010B	
Cyanide, Total	335.2	9010B 9014	ILMO4.0 (e)
Cyanide, Weak Acid Dissociable			412 (a) 4500CN-I (b
COD	410.4(mod)	-	5220C (b)
Color	110.2		
Corrosivity by Coupon		1110(mod)	
Chromium VI	*	7196A	3500Cr-D (b)
Fluoride	340.2	-	4500-FC
Hardness, Calcium	215.2		
Hardness, Total	130.2		
lodide			ASTM D19P202 (1)
Surfactant	/425.1		
Nitrate-NitriteNitrateNitrite	353.2		
Ammonia	7 350.3		
Total Kjeldahl Organic Nitrogen	351.3		
Total Organic Inorganic Carbon	415.1	9060	
Oil/& Grease	413.1	9070	
√ pH pH; paper	150.1	7 9040B 9041A	
Petroleum Hydrocarbons, Total Recoverable	418.1		
Phenol	420.1 420.2	9065 906	66
OrthoTotal Phosphate	365.2		4500-P B C
Salinity			210A (a) 2520 (b)
Settleable Solids	160.5	/	
Sulfide	376.1		(acid soluble)
ReactiveCyanideSulfide		_ Section 7.3 (90	149030B)
Silica	370.1		•
Sulfite	377.1		
Sulfate	375.4	_ 9038	
Specific Conductance	120.1	_ 9050A	
Specific Gravity			D5057-90 213E (a)
Synthetic Precipitation Leach	1312		·
TotalDissolvedSuspendedSolids	16012	3	
Total Organic Halides	450.1	_ 9020B	
Turbidity	180.1		
Volatile Solids:			
TotalDissolvedSuspended	160.4		
Other:	M	lethod:	

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- * = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LC = Laboratory Control Sample.

NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

- 1. ASTM Standard Methods.
- 2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
- 3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
- a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
- b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
- c. <u>Method of Soil Analysis</u>, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
- d. <u>Method of Soil Analysis</u>, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
- e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
- f. Code of Federal Regulations.

INORGANICS DATA SUMMARY REPORT 11/15/01

CLIENT: TNU-HAMPORD B02-007 H1569/1576 LVL LOT #: 0111L258

	-				REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	result	UNITS	LIMIT	FACTOR
*****		**************				
-002	B13CT0	Chloride by IC	0.25 પ	MG/L	0.25	1.0
		Fluoride by IC	0.50 u	MG/L	0.50	1.0
		Nitrite by IC	0.25 u	MG/L	0.25	1.0
		Nitrate by IC	0.25 u	MG/L	0.25	1.0
		Phosphate by IC	0.25 u	MG/L	0.25	1.0
		Sulfate by IC	0.25 u	MG/L	0.25	1.0
		Nitrate Nitrite	0.020u	MG/L	0.020	1.0
		Ammonia, as N	0.10 u	MG/L	0.10	1.0
		ρн	7.0	PH UNIT	0.01	1.0
		Sulfide	1.0 u	MG/L	1.0	1.0

INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/15/01

CLIENT: TNU-HANFORD B02-007 H1569/1576 LVL LOT #: 0111L258

NOIGE OILD	SK. 11345-000 002 3335				REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	Units	LIMIT	FACTOR

BLANK10	Ollico73-MB1	Bromide by IC	0.25 u	MG/L	0.25	1.0
		Chloride by IC	0.25 u	MG/L	0.25	1.0
		Fluoride by IC	0.50 u	MG/L	0.50	1.0
		Nitrite by IC	0.25 u	MG/L	0.25	1.0
		Nitrate by IC	0.25 11	MQ/L	0.25	1.0
		Phosphate by IC	0.25 u	MG/L	0.25	1.0
		Sulfate by IC	0.25 u	MG/L	0.25	1.0
BLANK10	Q1LN3B59-MB1	Nitrate Nitrite	0.020u	MG/L	0.020	1.0
BLANK10	01LAMB49-MB1	Ammonia, as N	0.10 u	MG/L	0.10	1.0
BLANK10	01LSD060-MB1	Sulfide	1.0 u	MG/L	1.0	1.0

INORGANICS ACCURACY REPORT 11/15/01

CLIENT: TNU-HANFORD B02-007 H1569/1576 LVL LOT #: 0111L258

			SPIKED	INITIAL	SPIKED		DILUTION
SAMPLE	SITE ID	ANALYTE	SAMPLE	RESULT	AMOUNT	*RECOV	Factor (SPK)
*****	**********		******		****		
-002	B13CT0	Chloride by IC	5.2	0.24	5.0	98.2	1.0
		Fluoride by IC	10.6	0.00	10.0	105.6	1.0
		Nitrite by IC	4.82	0.25u	5.00	96.4	1.0
		Nitrate by IC	4.77	0.25u	5.00	95.5	1.0
		Phosphate by IC	4.7	0.25u	5.0	95.0	1.0
		Sulfate by IC	4.9	0.25u	5.0	97.5	1.0
		Nitrate Nitrite	0.51	0.02u	0.50	102.4	1.0
		Ammonia, as N	1.9	0.10u	2.0	97.0	1.0
BLANK10	01LIC073-MB1	Bromide by IC	4.8	0.25u	5.0	96.0	1.0
		Chloride by IC	4.8	0.25u	5.0	96.7	1.0
		Fluoride by IC	10.9	0.50u	10.0	108.7	1.0
		Nitrite by IC	4.89	0.25u	5.00	97.8	1.0
		Nitrate by IC	5.03	0.25u	5.00	100.6	1.0
		Phosphate by IC	5.2	0.25u	5.0	104.2	1.0
		Sulfate by IC	4.8	0.25u	5.0	95.7	1.0
BLANK10	01LN3B59-MB1	Nitrate Nitrite	0.52	0.02u	0.50	104.0	1.0
BLANK10	01LAMB49-MB1	Ammonia, as N	2.0	0.10u	2.0	101.0	1.0
		Ammonia, as N MSD	2.1	0.10u	2.0	103.0	1.0
BLANK10	01LSD060-MB1	Sulfide	7.9	1.0 u	7.7	102.6	1.0
		Sulfide MSD	7.7	1,0 u	7.7	100	1.0

INORGANICS DUPLICATE SPIKE REPORT 11/15/01

CLIENT: TNU-HANFORD B02-007 H1569/1576

LVL LOT #: 0111L258

			SPIKE#1	SPIKB#2	:
SAMPLE	SITE ID	analyte	*RECOV	*RECOV	*DIFF
	***********		****	########	#87===
BLANK10	01LAMB49-MB1	Ammonia, as N	101.0	103.0	2.0
BLANK10	01LSD060-MB1	Sulfide	102.6	100	2,6

INORGANICS PRECISION REPORT 11/15/01

CLIENT: TNU-HANFORD B02-007 H1569/1576 LVL LOT #: 0111L258

			INITIAL			DILUTION
SAMPLE	SITE ID	ANALYTE	result	REPLICATE	RPD	FACTOR (REP)
*****	医埃里曼氏法里里氏征医里辛生毒毒毒	国际等级共享区域区区区域及 显显示设计中国区域区			*****	
-002RBP	B13CTO	Chloride by IC	0.25u	0.35	NC	1.0
		Pluoride by IC	0.50u	0.50u	NC	1.0
		Nitrite by IC	0.25u	0.25u	NC	1.0
		Nitrate by IC	0.25u	0.25u	NG	1.0
		Phosphate by IC	0.25u	0.25u	NC	1.0
		Sulfate by IC	0.25u	0.25u	NC	1.0
		Nitrate Nitrite	0.02u	0.02u	NC	1.0
		Ammonia, as N	0,10u	0.10u	NC	1.0
		рн	7.0	7.0	0.4	1.0
		Sulfide	1.0 u	1.0 u	NC	1.0

BANA From Mutals WET Custody Transfer Record/Lab Work Request Page _____ of ____ Lionville Laboratory Use Only 0416258 FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS B02-007 Client TNL HAN Ford Refrigerator # 126 Liquid Est. Final Prol. Sampling Date _ #/Type Container Project # 11343 - 606 -001 - 9999 - 00 Solid Liculd Project Contact/Phone # __ Volume Soffii OI Lionville Laboratory Project Manager _ Del STD **Preservatives** ac SPEC ORGANIC INORG **ANALYSES** Pest/ PCB REQUESTED 11-17-01 11-2-01 Date Due Date Rec'd Lionville Laboratory Use Only Matrix MATRIX QC CODES: 624× Date Time OLab Chosen Matrix IN3N FUH31 Client ID/Description 25 S - Soil Collected Collected O.T. **(v)** SE - Sediment 90 HH SO . Solid MS MSD St. - Sludge W - Water 10-24-0) 06-40 B13083 O - Oil A - Air 102 13 13 CTO h3tol DS - Drum Solids DL - Drum Liquids EP/TCLP Leachate WI - Wipe X - Other F - Fish DATE/REVISIONS: Special instructions: Lionville Laboratory Use Only 1. As Ba Cd. Cr. Pb. Se. Ag Be Cu. Ni. V. Zn Samples were:/ Temper Registent Seel was: 2 ICCL, ICFL, ICNO3 ICNOZ ICPOY ILSOY 1) Shipped — or 1) Present on Outer Package (V) or N Hand Delivered Canal 0624x Add 06244 + OGCSC Su Below 11-5-01 2) Unbroken on Outer Package Y or N 2) Ambient or Chilled 3) Present on Sample or N 3) Received in Good Condition (Y) or N 4) Unbroken on 4) Samples Sample (1) or N Property Preserved **COC Record Present** Relinquished Received Relinquished Received Date Discrepancies Between 19) or N Time Time Upon Sample-Rec't COMPACIT Samples Labels and 5) Received Within (Y) or N COC Record? Y or 69 4/261 WASTE 0935 **Holding Times** NOTES 4235 7954 8545

Bechtel Hanto	ord Inc.		HAIN OF CUST	TODY/SA.	ANALY	S REQUEST B02-007-02 Page 1					of 1		
Collector Thomas, G/Watson, D		Сомр	any Contact rlock, CS	Telephone 1 372-9638	Vo.			Project Coord		Price Code		Data Tu	rnaround
Project Designation 200 Area Source Characteriz	zation 200-CS-1 OU - QC	Samplin 200	ling Location East & West		· · · · · · · · · · · · · · · · · · ·			SAF No. B02-007	Air Quality	Air Quality 45			
Ice Chest No. See	DGPC	Field	Logbook No. EL-15	51 x	COA L2002CHGR			Method of Shipment Fed Ex					
Shipped To	RECRA	Offsit	e Property No.	0200	318			Bill of Leating	Air Bill	66PC			
POSSIBLE SAMPLE HAZ, Samples did not originate radiological controlled are total activity associated wi sample/samples.	in ea. No et 11-1-0	L	Preservation Type of Container	HCl or H2SO4 to pH <2 Coo									
Special панапив аполог	' Storage		No. of Container(s)						+				
			Volume	40mL					 		ļ	 	
	SAMPLE ANAL	YSIS	'	VOA - 8260A (TCL); VOA - 8260A (Add- On) (1- Propenol, Ethanol)									
Sample No.	Sample Date	Sample Time											
B13C83	WATER	10/29/01	2640	X									
	-			 					 		<u> </u>		
				 				_	╁			[-
CHAIN OF POSTROS										_{	ļ <u>.</u>		
CHAIN OF POSSESSI Relinquished By/Removed From	ON Date/Time	Sign/Prin Received By/Stor		te/Time	SPECI	AL INSTRU	CTIO	NS Juithin 24 hours	·C1			· · · · · ·	Matrix *
D3 WEEN STUR		S REF.IA	37288446 (of 1213	Laboratory is to measure pH within 24 hours of sample receipt. The SRC acknowledges the 48-hour holding time will not be met for Nitrate The laboratory is to report Decane as a TIC if present in detectable quantities.					using EPA me	thod 300.0.	3=6cil 13-Sedim _{ral}	
Relinquished By/Removed From	8 11-1-1X	O Reproved By Stor		1-1-01	9					-			SO-Golid Si-Sivings W = Water
Religional By/Isoloved Fire &	C C I - 1-0	Required By/Stor		ate/Time	j			- neu 1A	· ad Alba	2770			O=Oil A=Air D=Draw Solide
Relingation By Bernoved From	Date/Time 11/2-01 07:35	Received By Sper	red in Di	nterTime -OI 0935	-	Shipping	Facili	in Ref.# [A] ty on [O]=					DI/-Drum Liquids Tr/Times WIWips
Relinquished By/Removed From	Date/Time	Received By/Stor		Collector not available to relinquish samples on // / Of for shipment.							L=Liquid V=Vegetation X=Other		
Relinquished By/Removed From	Date/Time	Received By/Stor	red in Da	-{			·		p. ·				
LABORATORY Received Received	Ву		Title							<u> </u>	Ē	ate/Time	
FINAL SAMPLE Disposal P DISPOSITION	Method					Dispose	xd By					Date/Time	
PUI SE 011 (10/00)	····												

Bechtel 1	Hanford Inc.	1	CHAIN OF CUSTODY/SAMPLE ANALYSIS I							REQUEST B02-007-03 Page 1				Page 1	of I
Collector Watson, D/Bowers D	DL		Company Cearloc	Contact	Telephor 372-9	ne No.			Project Coordi TRENT, SJ	estor	rice Code	7N		Data Tur	· [
Project Designation 200 Area Source Ch	aracterization 200-CS-1 OU - (Sampling 200 Ea	Location st & West	<u> </u>				SAF No. B02-007	A	ir Qualit	у 🗆		45 1	Days
Ice Chest No.	E OSPC		Field Log EL155			COA B20CS1673C			Method of Shipment Fed Ex						
Shipped Fo TMA(RECRA)			Offsite Pr	operty No. AZ	320	ØØ	?		Bill of Loding/	Air Bill No.	<u>98</u> 2	<u>C</u>	_		
OSSIBLE SAMPLE HAZARDS/REMARKS Samples did not originate in radiological controlled area. No Preservation					HC1 or H2804 to pH <2 Coo		HNO3 to pH <2	H2SO4 to <2 Cool		ZnAo+NaOH to pH >9 Cool	HNO No pH	HCLor	12504	رها	
total activity associample/samples. Special Handling	iated with P7.01			Type of Container	aGs*	#G	aG	G		øG	10-5		10 2		
Shower remember]	No. of Container(s)	3 40mL	2 1000mL	1 1000mL	1000m	1 nL 1000mL	1 500mL	1000mL	40	mL		
	<u></u>	Volume	VOA - 8260A	Semi-VOA	See item (1) in	NO2/NO)3 - See item; (2) in	Sulfides - 903	0 Gross Alpha	; VOA	\$260A				
	SAMPLE AN			(TCL); VOA - 8260A (Add- On) (1- Propenol, Ethenol)	8278A (Ad On) (Tribut phosphate	tyl Instructions.	353.1; Ammon 350.3	ia - Instructions.		Gros Beta	8260A Chi Preg	VOA - L (Add-) (1- enol, mol)			
Sample No	. Matrix *	Sampl	e Date	Sample Time								1 1			
B13CT0	WATER	10-31	-01	1500	X	X	X	X	X	X		K		XB	
B136T1	10-31-01	_		 	 _	}		-		<u> </u>	 	+		<u> </u>	
CHAIN OF PO		Si _i	n/Print N	ames	J	SP	ECIAL INSTR	UCTIO	 NS	<u> </u>		L			Matrix *
Relinquished By/Remove Relinquished By/Remove Relinquished By/Remove	d From Dete/Time	1530 A .	LEy/Stored	3728 10-112 2 Thores		700 1000	The BRC acknown The laboratory is CP Metals - 6010A	wlodges the to report 1 10A (Supe (Supertrac	H within 24 hours of a 48-hour holding to Decane as a TIC if p artrace) (Arsenic, Br ce Add-On) (Berylli de, Fluoride, Nitrate	me will not be resent in dete arium, Cadmin um, Copper, 1	e met for Nitra ectable quantit um, Chromium Nickel, Vanad	ies. 1, Lead, S itum. Zinc	elenium,	, Silver};	S-Roll SS-Sediment SO-Sediment SO-Sediment SO-Sediment W - Wester O-Oil A-Air
Relinguished By/Remove	Receive	pred By/Stored In Date/Time 1 20 Oracle O				Samples Shipping Collector	stored i Facilit	in Ref. 12 13 1 y on 10 13 1 allable to relig	at the 372 / <u>/Ø</u>) . Iquish sar	<u>O</u>). uish samples				DS-Drum Solidy DL-Drum Liquids To-Trume Wi-Wige Lo-Liquid V=Vagatation X=Other	
Relinquished By/Remove		d By/Stored	In D	ste/Time		OD <u> </u>	1.J.C	∏ for shipme	nt.	ETIL	1-01				
LABORATORY SECTION	Received By		T	itle							D	ste/Time	•		
FINAL SAMPLE DISPOSITION	Disposal Method						Dispo	osed By					Ē	Oste/Time	

Figure 1. Sample Check-in List

-
SAFI B02-007
Chain of Custody # Bo2-007-02
Yes (3 No []
Yes [] No []
Yes W No []
Wet 1 Dry []
Yes [] No [].
hazard labels appropriate sample labels
leaking have air bubbles
ceipt? Yes [] No [] umbers):
honolog Sweep Daie: (1/2/01 Da By



Analytical Report

Client: TNU-HANFORD B02-007

W.O.#: 11343-606-001-9999-00

LVL#: 0111L258

Date Received: 11-02-01

SDG/SAF#: H1569/H1576/B02-007

METALS CASE NARRATIVE

1. This narrative covers the analysis of 1 water sample.

- 2. The sample was prepared and analyzed in accordance with methods checked on the attached glossary.
- 3. All analyses were performed within the required holding times.
- 4. The cooler temperature has been recorded on the Chain of Custody.
- 5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits.
- 6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the POL).
- 7. The preparation/method blanks for 3 analytes were outside method criteria. {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
 - a). The MB results for Beryllium, Copper, and Zinc were greater than the Practical Quantitation Limit (PQL) {3 x the (IDL) Instrument Detection Level} and all samples read less than 20 times the MB concentration. However, no corrective action criteria for MBs were provided in SW846 method 6010B. The sample results were reported herein "uncorrected" for the levels found in the MB.
- 8. All ICP Interference Check Standards were within control limits.
- 9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.
- 10. All matrix spike (MS) recoveries were within the 75-125% control limits. Refer to the Inorganics Accuracy Report.

- 11. The duplicate analyses for 2 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.
- 12. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.
- 13. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Deputy Laboratory Manager Lionville Laboratory Incorporated

gmb/m11-258

11-15-01

Date



METALS METHOD GLOSSARY

	te following methods are used as reference for the digestion and analysis of samples contained within this of the other of						
eaching Procedure:131013111312Other:							
LP Metals Digestion and Analysis Methods:ILM03.0ILM04.0							
letals Digestion	n Methods:3005A3 Other:	3010A _3015 _30	20A _3050B	_3051 _	200.7 _SS17		
		letals Analysis Me	thods				
				EPA			
	SW846	EPA	STD MTD	OSWR	USATHAMA		
munimul	6010B	200.7			99		
intimony	_6010B _7041 ⁵	200.7204.2			<u>_</u> 99		
Arsenic	√_6010B7060A ^s	200.7206.2	3113B		99		
3ariu m	√_6010B	200,7			99		
3erylli um	∠6010B	200.7			99		
3ismuth /	_6010B ¹	200.7 1		1620	99		
3oron	_6010B	200.7			99		
Cadmiu m	<u>√6010B</u> _7131A °	_200.7 _213.2			99		
Calcium	_6010B	200.7			99		
Chromium	<u>√6010B</u> _7191 °	200.7218.2	,		SS17		
Cobalt	6010B	200.7			99		
Copper	∠6010B _7211 ⁵	200.7220.2			99		
lron	_6010B	200.7			99		
Lead	<u>√6010B</u> _7421 ^s	200.7239.2	3113B		99		
Lithium	_6010B7430 ⁴	200.7		1620	99		
Magnesium	6010B	200.7			9 9		
Manganese	_6010B	200.7			99		
Mercury	_7470A'_7471A'				<u>99</u>		
Molybdenum	_6010B	200.7			99		
Nickel	∠6010B	200.7			99		
Potassium	_6010B _7610 ·	200.7258.1 *			99		
Rare Earths	6010B '	200.7 '		1620	99		
Selenium	<u>√</u> 6010B <u>7740</u> °	_200.7 _270.2	_3113B		99		
Silicon	6010B '	200.7		1620	99		
Silica	6010B	200.7		1620	99		
Silver	∠6010B 7761 *	200.7272.2			99		
Sodium	6010B7770 ⁴	200.7273.1 4			99		
Strontium	6010 B	200.7			- 99		
Thallium	6010B7841 ⁵	200.7279.2	200.9		99		
Tin	6010B				99		
Titanium	6010B	200.7			99		
Uranium	,6010B ¹	200.7		1620			
Vanadium	$\mathcal{T}_{6010 extbf{B}}$	200.7					
Zinc	$\sqrt{6010B}$	200.7			99		
Zirconium	6010B '	200.7 1		1620	99		
		~~~					

Method:

Other:

5

L-WI-033/M-03/01

#### METHOD REFERENCES AND DATA QUALIFIERS

#### DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- B = Indicates that the parameter was between the Instrument Detection Limit (IDL) and the Contract Required Detection Limit (CRDL)

#### **Q QUALIFIERS**

- E = The reported value is estimated because of the presence of interference.
- M = Duplicate injection precision not met.
- N = Spiked sample recovery not within control limits.
- S = The reported value was determined by the Method of Standard Additions (MSA).
- W = Post Digestion spike for Furnace AA analysis is out of control limits (85 -115 %), while sample absorbance is less than 50% of spike absorbance.
- * = Duplicate analysis not within control limits.
- += Correlation coefficient for the MSA is less than 0.995.

#### **ABBREVIATIONS**

- PB = Method or Preparation Blank.
- S = Matrix Spike.
- T = Matrix Spike Duplicate.
- R or D = Sample Replicate

#### ANALYTICAL METAL METHODS

- 1. Not included in the method element list.
- 2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, 0.1 grams of sample is taken to a final volume of 50 mL (including all reagents).
- 3. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, three 0.1 gram of sample is taken to a final volume of 50 mL (including all reagents).
- 4. Flame AA.
- Graphite Furnace AA.
   RFW 21-21L-033/O-01/97

#### INORGANICS DATA SUMMARY REPORT 11/13/01

CLIENT: TNU-HANFORD B02-007 LVL LOT #: 0111L258

Sample	SITE ID	ANALYTE	RESULT	UNITS	reporting Limit	DILUTION FACTOR
*=*===	医水管医球管管肠管管肠管医院管外障碍	古字名写文色名兰名宗写及扩充社会与文字写典者	<b>有可能的 1</b>	****	****	****
-002	B13CT0	Silver, Total	0.60 u	ng\r	0.60	1.0
		Arsenic, Total	3.2 u	UG/L	3.2	1.0
		Barium, Total	0.43	UG/L	0.10	1.0
		Beryllium, Total	0.39	UG/L	0.10	1.0
		Cadmium, Total	ע 30.00	UG/L	0.30	1.0
		Chromium, Total	5.2	UG/L	0.60	1.0
		Copper, Total	1.2	UG/L	0.50	1.0
		Nickel, Total	1.0 u	UG/L	1.0	1.0
		Lead, Total	1.9 u	UG/L	1.9	1.0
		Selenium, Total	2.2 u	UG/L	2.2	1.0
		Vanadium, Total	0.50 u	UG/L	0.50	1.0
		Zinc, Total	6.5	UG/L	0.30	1.0

#### INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/13/01

CLIENT: TNU-HANFORD B02-007 LVL LOT #: 0111L258

					REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RBSULT	UNITS	LIMIT	FACTOR
*****	************	<b>建设设施的 医阿里斯氏性 医阿里斯氏性</b>		*****	*******	
BLANK1	01L0725-MB1	Silver, Total	0.60 u	UG/L	0.60	1.0
		Arsenic, Total	3.2 u	UG/L	3.2	1.0
		Barium, Total	0.24	UG/L	0.10	1.0
		Beryllium, Total	0.31	UG/L	0.10	1.0
		Cadmium, Total	0.30 u	UG/L	0.30	1.0
		Chromium, Total	0.60 u	UG/L	0.60	1.0
		Copper, Total	1.6	UG/L	0.50	1.0
		Nickel, Total	1.0 u	UG/L	1.0	1.0
		Lead, Total	1.9 u	UG/L	1.9	1.0
		Selenium, Total	2.2 u	UG/L	2.2	1.0
		Vanadium, Total	0.50 u	UG/L	0.50	1.0
		Zinc, Total	2.3	UG/L	0.30	1.0

#### INORGANICS ACCURACY REPORT 11/13/01

CLIENT: TNU-HANFORD B02-007

LVL LOT #: 0111L258

HOLEK GREEN TO THE TENT								
				SPIKED	INITIAL	SPIKED		DILUTION
	SAMPLE	SITE ID	ANALYTE	SAMPLE	RESULT	AMOUNT	*RECOV	FACTOR (SPK)
	******	************	************	******	******			
	-002	B13CT0	Silver, Total	49.0	0.60u	50.0	98.0	1.0
			Arsenic, Total	1980	3.2 u	2000	98.9	1.0
			Barium, Total	1930	0.43	2000	96.4	1.0
			Beryllium, Total	50.2	0.39	50.0	99.6	1.0
			Cadmium, Total	49.2	0.301	50.0	98.4	1.0
			Chromium, Total	201	5.2	200	98.1	1.0
			Copper, Total	247	1.2	250	98.5	1.0
			Nickel, Total	501	1.0 u	500	100.1	1.0
			Lead, Total	499	1.9 u	500	99.8	1.0
			Selenium, Total	1980	2.2 u	2000	98.8	1.0
			Vanadium, Total	487	0.50u	500	97.5	1.0
			Zinc, Total	494	6.5	500	97.4	1.0

#### INORGANICS PRECISION REPORT 11/13/01

CLIENT: TNU-HANPORD B02-007 LVL LOT #: 0111L258

			INITIAL			DILUTION
SAMPLE	SITE ID	ANALYTE	result	REPLI CATE	RPD	FACTOR (REP)
	**********	*********		*****		********
-002RBP	B13CT0	Silver, Total	0.60u	0.60u	NC	1.0
		Arsenic, Total	3.2 u	3.2 u	NC	1.0
		Barium, Total	0.43	0.33	26.3	1.0
		Beryllium, Total	0.39	0.43	9.8	1.0
		Cadmium, Total	0.30u	0.30u	NC	1.0
		Chromium, Total	5.2	1.4	115.2	1.0
		Copper, Total	1.2	1.1	8.7	1.0
		Nickel, Total	1.0 u	1.0 u	NC	1.0
		Lead, Total	1.9 u	1.9 u	NC	1.0
		Selenium, Total	2.2 u	2.2 u	NC	1.0
		Vanadium, Total	0.501	0.504	NC	1.0
		Zinc, Total	6.5	6.4	1.6	1.0

#### INORGANICS LABORATORY CONTROL STANDARDS REPORT 11/13/01

CLIENT: TNU-HANFORD B02-007

LVL LOT #: 0111L258

WORK ORDE	K. 11343 000 001 2222	<del>-</del> -				
			SPIKED	SPIKED		
SAMPLE	SITE ID	ANALYTE	SAMPLE	AMOUNT	units	*RECOV
******	**********	*********	*****			*****
LCS1	01L0725-LC1	Silver, LCS	446	500	UG/L	89.2
		Arsenic, LCS	9700	10000	UG/L	97.0
		Barium, LCS	4790	\$000	UG/L	95.7
		Beryllium, LCS	249	250	OG/L	99.6
		Cadmium, LCS	245	250	UG/L	97.8
		Chromium, LCS	487	500	UG/L	97.5
		Copper, LCS	1240	1250	UG/L	99.0
		Nickel, LCS	1980	2000	UG/L	99.1
		Lead, LCS	2460	2500	UG/L	98.3
		Selenium, LCS	9860	10000	UG/L	98.6
		Vanadium, LCS	2460	2500	UG/L	98.5
		Zine, LCS	990	1000	UG/L	99.0

SNA From Matels WET Lionville Laboratory Use Only 01116258 FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS B02-007 Client TNUL HAN FOUN Refrigerator # 2. ۲ AU 26 cK ı Liquid Est. Final Proj. Sampling Date ___ #/Type Container Protect # 11343 - 606 -001 - 9999 - 00 Solid Llouid. 40 1000 Project Contact/Phone # Volume 07 Solid Lionville Laboratory Project Manager oc SPEC 570 **Preservatives** ORGANIC NON IC INORG ANALYSES Date Rec'd (1-2-01 REQUESTED 11-17-01 Date Due Lionville Laboratory Use Only MATRIX Matrix CODES: OC 0624× Lab # N3 N 2 Chosen Date Time 6 Client ID/Description S - Soll Matrix 5240 Collected Collected Ç.₹ SE - Sediment SO - Solid MS MSD SL - Sludge W - Water 10-29-01 66-40 1813C83 0 - OI A - Alt 102 B13 CTO h3tol DS - Drum Solids DL - Drum Liquide L - EP/TCLP Leachate WI - Wipe X - Other F - Fish DATE/REVISIONS: Lionville Laboratory Use Only Special Instructions: MCTO 1, As Ba Cd. Cr. Pb. Se. Ag. Be Cu. Ni, V. Zn Samoles were: Tamper Resistant Seal was: 1) Shipped ___ or 1) Present on Outer IC 1 2 ICCL, ICFL, ICNOS, ICNOZ, ICPOY ILSOY Hand Delivered ____ Package (v) or N Canal 0624x Add 06244 + OGCSC ANDIR # ______ 2) Unbroken on Outer Package Y or N 2) Ambient or Chilled 3) Present on Sample or N 3) Received in Good Condition (Y) or N 4) Unbroken on Sample Oor N 4) Samples **Property Preserved COC Record Present** Relinquished Received Relinguished Received Discrepancies Between (Y) or N Date Time Upon Sample-Rec't COMPOSITI Samples Labels and Y or N 5) Received Within ORIGINAL COC Record? Y or 69 11/2/01 WASTE **Holding Times** Cooler Temp. ____ Y)or N

	anford Inc.	СЕ	IAIN OF CUST	ODY/SA	MP	LE ANALY	SIS	REQUES	ST	B0	2-007-02	Page 1	of 1
Collector Thomas, G/Watson, D			ry Contact ock, CS	Telephone 372-963				Project Coor TRENT, SJ	dinator	Price Code	ZX	Data Tur	
Project Designation 200 Area Source Chara	acterization 200-CS-1 OU - QC S	amplin 200 l	ng Location East & West					SAF No. B02-007		Air Qualit	y 🗀	- 45 1	Days A
Ice Chest No. SC	e DOPL	Field L	ogbook No. EL-15	51	COA XL200	2CHGR	_	Method of Sh Fed Ex	ipment				
	INDER RECEA		Property No. $+70$	520	Chl	8		Bill of Lentin	Air Bill	COR			
Samples did not origi radiological controlle	ed area, No		Preservation	HClorH2SO4 to pH <2 Coo	ψ.								
total activity associate sample/samples. Special rinnquing hi			Type of Container	aGs*							-		<del></del>
observe transming at	nwoi otorage		No. of Container(s)	1									
			Volume	40mL								<del></del>	
	sample anal	YSIS		VOA - 8269A (TCL); VOA - 8269A (Add- On) (1- Propenol, Ethanol)									
Sample No.	Matrix *	Sample Date	Sample Time										
B13C83	WATER	10/29/01	2640	У									
							<u> </u>		_				<b></b>
	<u>.</u>	<del></del>		<u> </u>					-}				<del> </del> -
		<del></del>							_				
CHAIN OF POSS	SESSION	Sign/Print				PECIAL INSTRU				· · ·	<u></u>		Matrix *
Ratinquished By/Removed Fi DS WEN GT Ratinquished By/Removed Fi K & L 1 A 3	1/4   6-30-01   2/10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10   10-10-10	O Recovery Physican	37281810G 1	nte/Time 0	15	** Laboratory is to m  ** The ERC acknow  ** The laboratory is t	lodges ti	ne 48-hour holdin	g time will:	not be met for Nitra	to using EPA met ies.	hod 300.0.	S=Soli SB=Soliment SO=Solid SI=Studge W = Water O=Oil
Reinappined By/Leodoved F	MORE PARTIES	Respired By/Ston	14 14	te/Time		Samples	store	in Ref.# [	at th	e 3728			A=Air DS=Drum Solids DL=Drum Liquids T=Timpe
Relinguished By Reserved Fr	11/2/01 07.35	Received Explision	example 11-2		5	Shipping Collector	Facil r not :	ity on <u>[C] /</u> vailable to i <u>C]</u> for ship	S//()	L. h samples	1.01		Wi-Wips L-Liquid V-Vegetation
Relinquished By/Romoved F		Received By/Store	od in C/Di	te/Titne		on <u>///</u> /	11.	Of for ship	ment.	n samples			X=Other
Relinquished By/Removed F	rom Date/Time	Received By/Store	d in D	ste/Time			- <u></u>	<u></u>					
LABORATORY Rec	caived By			Title	6						D	ate/Time	_
FINAL SAMPLE Dis	sposal Method					Dispos	ed By		····		D	oate/Time	

Bechtel Hanford	d Inc.	CE	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST B02-007-03 Page 1								of i						
Collector Watson, D/Bowers DL			ny Contact lock, CS	Telephor 372-96						ect Coordin: NT, SJ	etor Pr	ice Co	de	7N		Data Tur	· · · · · · · · · · · · · · · · · · ·
Project Designation 200 Area Source Characterizati		Sampli mplin 200	ng Location East & West						SAF B02-		Ai	r Qu	ality			45 ]	Days
Ice Chest No. SEE	OSPC	Field L EL1	o <b>gbook</b> No. 551		COA B20CS	16730	c			hod of Shipm ed Ex	ient						
Shipped To TMA(RECRA)	<del></del>	Offsite	Property No. AZ	120	ØB	7			Bill	of Lading/A	ir Bill No.	<u>-</u> کد	D(	1	/	<u></u>	
POSSIBLE SAMPLE, HAZAR Samples did not originate in radiological controlled area. total activity associated with sample/samples.	No IFI-DI		Preservation  Type of Container	HCl or H2SO to pH <2 Coo	Cool 4	c	HNO3 to pH <2	H2SO4	ol 4C	Cool 4C	ZnAc+NeOH to pH >9 Cool		уюрн 63 . О		VSO4 12 Coo,		
Special Handling and/or S	storage		No. of Container(s)	3	2	十	1	1		1	1	<del>  '</del>	2	╁─╴	<del> </del>		<del> </del>
			Volume	40mL	1000m	nL	1000mL	1000	mL	1000mL	500mL	10	OmL	4	ani,		<del> </del>
	SAMPLE ANALY	sis	L	VOA - 8260A (TCL); VOA 8260A (Add- On) (1- Propanol, Efitanol)	- 8270A (A	Add- butyi	See item (1) in Special Instructions.	NO2/N 353. Arteno 350	.l; mie-	See item (7) in Special Instructions.	Suifides - 9030		Alpha; s Beta	EZ60 Pre	8260A ; VOA - A (Add- n) (1- psmoi, namol)		
Sample No.	Matrix *	Sample Date	Sample Time														
B13CT0	WATER	0-31-01	1500	X	l X		χ	$\lambda$	(	Х	У			<del></del>	<b>-</b> -∧	X3	
D130T1 A 7/	WATER														<u> </u>		<u> </u>
1 10 10-3	1-01					$\neg \top$											
			,			$\Box$								$T^-$			<u> </u>
CHAIN OF POSSESSIO		Sign/Prin	t Names				al instr										Matrix *
Relinquished By/Removed From Don Relinquished By/Removed From By/Removed	128 11-01 128 11-01	Recipied By Stor	\$ 1728 10-112 Thores	ste/Time	3 700 1	** The ** The (I) ICF ICP Me	BRC acknown a laboratory is Metals - 601 stals - 6010A	riedges i to report OA (Sup (Supertr	he 48-b t Docum pertrace ace Add	hin 24 hours of hour holding tin ne as a TIC if pu s) {Arsenic, Ban d-On) {Beryllin moride, Nitrate,	ne will not be resent in detec rium, Cadmiu um, Copper, N	met for tuble q m, Chri lickel,	pantitio omium, Vanadiu	s. Lead, S m, Zind	Selenium :}	ı, Silv <del>er</del> };	Sequil SB-Golimant SO-Golid SI-Glodge W w Water CO-Oll A-Air DS-Drawn Solids DL-Drawn Liquids
Relinquished By/Removed From Relinquished By/Removed From Relinquished By/Removed From	Dete/Time	Received ByStor	od K Di	ste/Time    Gq  ste/Time	35	1	Shipping Collector	Facilit not av	ty on vailat	ef. RA s 10131 ble to reline or shipmen	<u>/Ø)</u> . quish sam	pies	١٠١٠	. Ol			Twittens WinWipe Lull-liquid VwVegetation X=Other
LABORATORY Received By	<del></del>		<del></del>	T	itte								A .		D	stc/Time	
SECTION FINAL SAMPLE Disposal Me DISPOSITION	thod	<del> </del>	<del></del>			<del></del>	Dispos	od By	<del></del>		<del></del>					Date/Time	<del></del>



## **Analytical Report**

Client: THU HANFORD B02-007

**W.O.#:** 11343-606-001-9999-00

LVL#: 0111L258

Date Received: 11-02-01

**SDG/SAF#**: H1569/H1576/<del>B99-000</del>

#### GC SCAN

One (1) water sample was collected on 10-31-01.

The sample and its associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on Method 8015B for Gasoline Range Organic (GRO) target compounds Ethanol and n-Propyl Alcohol on 11-05-01.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. The sample was packaged and stored as specified in the method protocol.
- 2. Surrogates are not currently employed in the methodology.
- 3. All initial calibrations were within acceptance criteria.
- 4. All continuing calibrations run prior to analysis were within acceptance criteria.
- 5. All blank spike recoveries were within acceptance criteria.
- 6. All matrix spike recoveries were within acceptance criteria.
- 7. Insufficient volume to perform analyses for Sample B13C83.

Deputy Laboratory Manager

Lionville Laboratory Incorporated

r:\share\gcpest\narr temp\thu258gcsc.doc

Date

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 9 pages.



## GLOSSARY OF GC VOLATILES DATA

## **DATA QUALIFIERS**

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

## **ABBREVIATIONS**

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- **DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- **DF** = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



# GLOSSARY OF GC VOLATILES DATA

- P = This flag is used for an GC VOLATILES target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- **D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC VOLATILES.

#### Lionville Laboratory, Inc.

GC SCAN

Report Date: 11/09/01 14:19 RFW Batch Number: 0111L258 Client: TNU-HANFORD B02-007 Work Order: 11343606001 Page: 1 Cust ID: BLK BSD B13CT0 B13CT0 B13CT0 BLK BLK BS Sample 01LJLB05-MB1 01LJLB05-MB1 01LJLB05-MB1 RFW#: 002 002 MS 002 MSD Information Matrix: WATER WATER WATER WATER WATER WATER D.F.: 1.00 1.00 1.00 1.00 1.00 1.00 Units: mg/L mg/L mg/L mg/L mg/L mg/L 5.0 U 94 ¥ 96 8 5.0 U 99 % 99 n-Propyl Alcohol Ethanol 5.0 บั 103 % 99 % 5.0 U 101 % 100 %

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

N

U BAHA From Metals WET Custody Transfer Record/Lab Work Request Page _____ of ____ Lionville Laboratory Use Only 011/258 FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS ALDI 802-007 2 Client TNIL HAN FOU Refrigerator # 126 Liquid Est. Final Proj. Sampling Date #/Type Container Sald Project # 11343 - 606 -001 - 9999 - 00 Civili Project Contact/Phone # _____ Volume 07 Lionville Laboratory Project Manager _ **Preservatives** ac _ 5PEC ORGANIC ANALYSES Pest/ REQUESTED 11-17-01 110-2-01 Date Rec'd **Date Due** Lionville Laboratory Use Only Matrix MATRIX QC CODES: 0624x <u>0</u>5 Time Lab Chosen Client ID/Description Matrix S - Soil Collected Collected OF (V) SE - Sediment 90 4 4 SO - Solid MS MSD SL - Sludge W - Water 10-24-0) DE40 1613083 O- OR A - Air 1102 B 13 CTO *150*0 **b31**0 DS - Drum Solids DL - Drum Liquida EP/TCLP Leachate WI - Wine X - Other F - Fish DATE/REVISIONS: Special Instructions: Lionville Laboratory Use Only ACTO 1 As Ba Cd. Cr. Pb. Se. Ag. Be. Cu. Ni, V. Zn Samples were: Temper Registent Seel was: 1) Shipped L or 2 ICC, LEFL, ICNO), ICNOZ, ICPOY, ICSOY 1) Present on Outer Package ( ) or N Hand Delivered _ _ Althu # Canad 0624x Add 06244 + OGESC 11-5-01 3 2) Unbroken on Outer Package (Y or N 2) Ambient or Chilled 3) Present on Sample Y or N 3) Received in Good Condition (Y) or N 4) Unbroken on 4) Samples Sample (V) or N Property Preserved COC Record Present Relinquished Received Relinquished Received Discrepancies Between (Y) or N Date Upon Sample-Rec't Time COMPOSITI Samples Labels and (Y or N 5) Received Within COC Record? Y or (1) ulabi WASTE Holding Times Cooler *10*35 NOTES ---Temp. _____ 4235 7954 8545 Y)or N

Bechtel Hanfor	d Inc.	c	HAIN OF CUST	ODY/S.	AMP.	LE ANAL	YSIS	REQUES	T	В0	2-007-02	Page 1	of 1
Collector Thomas, G/Watson, D			any Contact triock, CS	Telephon 372-96				Project Coor TRENT, SJ	linator	Price Code	75		naround
Project Designation 200 Area Source Characterizat	ion 200-CS-1 OU - QC S	umplin 200	ling Location East & West					SAF No. B02-007		Air Quality	, o	45 15	Days Rit
Ice Chest No. SCC	DOPC	Fleid	Logbook No. FL-15	51	COA XL200	2CHGR		Method of Ski Fed Ex	Juneal.		-		•
Shipped To		1	e Property Na. A	520	Chl	8		Bill of Lealing	Air Bill	"ARI	_	<del> </del>	
POSSIBLE SAMPLE HAZAR Samples did not originate in radiological controlled area.	No.		Preservation	HCl or H2204 to pH <2 Coo									
total activity associated with sample/samples.  Special manuing andor's	F		Type of Container	aGs*				<u> </u>			<b>†</b>	<del>                                     </del>	
			No. of Container(s)	ì									
	<del></del>		Volume	40mL									
·	SAMPLE ANALY	SIS		VOA - 8260A (TCL); VOA - 8260A (Add- On) (1- Propunol, Bithenol)									
Sample No.	Matrix *	Sample Date	Sample Time										
B13C83	WATER	10/29/01	2640	У			1						
					<u> </u>								
	<del></del>							-}	<u> </u>		<b> </b>		
CHAIN OF POSSESSION		Sign/Prin	nt Names	<u> </u>	1	PECIAL INSTR					<u>l</u>	<u> </u>	
Relinquished By/Removed From  DS WESN GOVERN Relinquished By/Removed From	Date/Time   Date/Time   OO   OO   OO   OO   OO   OO   OO	Received By/Sto	red in De De - 3 728 & DC (6		1.5	* Laboratory is to m  * The ERC acknown  The laboratory is	easure pH ledges the	within 24 hours 48-hour holding	an lliw acuit	t he met for Nitrata	s using EPA me s.	thod <b>300</b> .0.	Matrix * 2-4oll 28-4oliment 20-4olid
Rolling By Rodoved Fra O	11-1-0	Rospinus By/Sty		(-   - ()		Samulas	etored i	n Ref.#   A	at the	3728			21-Studge W = Water O=OE AnAir DB=Dram Solide DE=Dram Liquida
	Date/Time (12/01 07/35	Received by Syn	RNANCK (100	te/Time -01 093	5	Shipping Collector	g Paculi r not av	ے رہے on عربی ailable to re	بر بريد linquish	,			To Steme Will Wipe Lot Louisid
Relinquished By/Removed From	Date/Time	Received By/Sto	red In O	te/Time		012 <u> </u>	ع لــــــــــــــــــــــــــــــــــــ	for ships	nent.	RT II	100		V=Vegetation X=Other
Relinquished By/Removed From	Date/Time	Received By/Sto	red In Da	te/Time		٠							}
LABORATORY Received By SECTION				Tid	0	<del></del>		<del></del>		<del></del>	E	ete/Time	
FINAL SAMPLE Disposal Met DISPOSITION	thod					Dispos	ed By	<del></del>			ī	Oate/Time	

Received By/Stored In    Consideration   Consi	CHAIN OF CUSTODY/S		
200 East & West   200 East &	Company Contact Telephon Contock, CS 372-96	TRENT, SJ Price Code /N Data rainal	İ
Shipped BC TRACECA TRA	C Sampling Location 200 East & West		ays
TRIABECRA Samples aid not originate in  Preservation  Pres		Method of Shipment Fed Ex	
Preservation (p) 4 Cod 4	Offilite Property No. AZOZO	Bill of Lading/Air Bill No.	
Type of Containers  Type of Containers  No. of Cont		24 to pH Cool 4C ZnAo+NnOR HNOL to pH HCLor HUSO4 Cool 4C to pH >9 Cool 17 12 A to pH 12 Coo.	
No. of Constainer(*)    Volume	Type of Container aGs*		
SAMPLE ANALYSIS    Control Vote   Co	No. of Container(s)	1 1 1 2	
Sample No. Matrix * Sample Date Sample Time  Sample No. Matrix * Sample Date Sample	Volume 40mL	00mL 1000mL 500mL 1000mL 40mL	
B13CTO WATER    D-3/-01   500	(TCL); VOA- 8569A (Add- On) {1- Propend,	S3.1; Special Gross Bets (TCL); VOA- monis - Instructions. 350.3 Gross Bets (TCL); VOA- 8260A (Add- Oh) (1- Propenci,	
CHAIN OF POSSESSION  Relinquished By/Removed From 10th 9 Date/Time   Received By/Stored in Date/Time	Sample Date Sample Time		
CHAIN OF POSSESSION  Sign/Print Names  Relinquished By/Removed From 1949  Date/Time  Received By/Stored In  Date/Time  Collector not available to relinquish samples  Collector not available to relinquish samples	10-31-01 1500 X	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
CHAIN OF POSSESSION  Relinquished By/Removed From 10-24 9 Date/Time   Received By/Stored In   Date/Time   SPECIAL INSTRUCTIONS   Machine 24 hours of sample receipt.   Second By/Stored In   Date/Time   SPECIAL INSTRUCTIONS   Machine 24 hours of sample receipt.   Second By/Stored In   Date/Time   SPECIAL INSTRUCTIONS   Machine 24 hours of sample receipt.   Second By/Stored In   Date/Time   Samples stored In Ref.   Shipping Facility on   Date/Time   Samples stored In Ref.   Shipping Facility on   Date/Time   Shipping Facility on   Date/Time   Collector not available to relinquish samples   Shipping Facility on   Date/Time   Collector not available to relinquish samples   Shipping Facility on   Date/Time   Collector not available to relinquish samples   Shipping Facility on   Date/Time   Collector not available to relinquish samples   Shipping Facility on   Date/Time   Collector not available to relinquish samples   Shipping Facility on   Date/Time   Collector not available to relinquish samples   Shipping Facility on   Date/Time   Collector not available to relinquish samples   Shipping Facility on   Date/Time   Collector not available to relinquish samples   Shipping Facility on   Date/Time   Shipping Facility on   Date/Time   Collector not available to relinquish samples   Shipping Facility on   Shipping Facility o			
Received By/Removed From Ore 9 Date/Time Received By/Stored In Date/Time Supple receipt.  **Laboratory is to measure pH within 24 hours of sample receipt.  **The BRC acknowledges the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  **The BRC acknowledges the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  **The laboratory is to report Decane as a TIC if present in detectable quantities.  **The BRC acknowledges the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  **The BRC acknowledges the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  **The BRC acknowledges the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  **The BRC acknowledges the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  **The BRC acknowledges the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  **The BRC acknowledges the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  **The BRC acknowledges the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  **The BRC acknowledges the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  **The BRC acknowledges the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  **The BRC acknowledges the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  **The BRC acknowledges the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  **The BRC acknowledges the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  **The BRC acknowledges the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  **The BRC acknowledges the 48-hour holding time will not be method 300.0.  **The BRC acknowledges the 48-hour holding time will not be method 300.0.  **The BRC acknowledges the 48-hour holding time will not be method 300.0.  **The BRC acknowledges the 48-hour holding time will not be method	<del>                                     </del>		
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Relinquished By/Removed From 1049 Date/Time   Received By/Stored In   Date/Time   Collector not available to relinquished By/Removed From   Date/Time    Sign/Print Names	TIONS 1	Matrix *	
Reinfuncted Explaints of Date/Time  Collector not available to relinquish samples	Received By/Stored In  1730 A + 2 A 3 72 & 10-71 st//1730  100 Reserved By/Stored ID TO PROTITION CONTINUED CONTINUE	re pH within 24 hours of sample receipt.  In the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  In the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  In the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  In the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  In the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  In the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  In the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  In the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  In the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  In the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  In the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  In the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  In the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  In the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  In the 48-hour holding time will not be met for Nitrate using EPA method 300.0.  In the 48-hour holding time will not be method as a fine will no	-Goël B-Golfmant D-Golfd -Gludge ' - Water
Relinquished By/Removed From  Date/Time  Received By/Stored In  Date/Time  Received By/Stored In  Date/Time  Collector not available to relinquish samples	Received By/Stored In  OI-O + CO C	aloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); pH (Water) - 9040	-Air O-Drom Solida L-Drom Liquida -Tiosoc
on [ / ] // ] for shipment		ility on 1013(19).	%-Wipu -Liquid Vegetation Other
[	Received By/Stored In Date/Time		
LABORATORY Received By Title Date/Time SECTION	m	Date/Time	
FINAL SAMPLE Disposal Method Disposed By Date/Time		y Date/Time	

# Figure 1. Sample Check-in List

Date/Time Received: 1/2/01 0935	•
SDG#: <u>01/16</u> 258	•
Work Order Number:	SAF# B02-007
Shipping Container ID:	Chain of Custody # Bo2-007-02
1. Custody Seals on shipping container intact?	Yes ( No []
2. Custody Seals dated and signed?	Yes [] No []
3. Chain-of-Custody record present?	Yes [ No [ ]
4. Cooler temperature/	·
5. Vermiculite/packing materials is	Wet #1 Dry []
6. Number of samples in shipping container:	
7. Sample holding times exceeded?	Yes [] No FJ
	nszard labels ppropriate sample labels
	leaking have air bubbles
10. Were any anomalies identified in sample reco	· ·
Sample Custodian/Laboratory forwirlle for Telephoned to:	malny decap. Date: 1/0/01  By



Client: TNU-HANFORD B02-007

LVL#: 0111L258

SDG/SAF #: H1569/B02-007

**W.O.** #: 11343-606-001-9999-00

**Date Received:** 11-02-2001

#### **SEMIVOLATILE**

One (1) water sample was collected on 10-31-2001.

The sample and its associated QC samples were extracted on 11-06-2001 and analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8270C for TCL and Tributylphosphate Semivolatile target compounds on 11-17-2001.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- 1. The cooler temperature upon receipt has been recorded on the chain-of-custody.
- 2. The sample was extracted and analyzed within required holding time.
- 3. Non-target compounds were detected in the sample.
- 4. All surrogate recoveries were within EPA QC limits.
- 5. All matrix spike recoveries were within EPA QC limits.
- 6. All blank spike recoveries were within EPA QC limits.
- 7. Internal standard area and retention time criteria were met.
- 8. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

J. Michael Tayl

President

Lionville Laboratory Incorporated

som\gorup\data\bna\tnu-hanford-0111-258.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 2 pages.

#### **GLOSSARY OF BNA DATA**

#### **DATA QUALIFIERS**

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E . Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D = Identifies all compounds identified in an analysis at a secondary dilution factor.
- 1 = Interference.
- NQ = Result qualitatively confirmed but not able to quantify.
- A = Indicates that a TIC is a suspected aldol-condensation product.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.



3

### **GLOSSARY OF BNA DATA**

### **ABBREVIATIONS**

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Suffix added to sample number to indicate that results are from a diluted analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP, Z = Indicates Spiked Compound.



### TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quantitation modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quantitation modifications:

- MP Missed Peak: manually added peak not found by automatic quantitation program.
- PA Peak Assignment: quantitation report was changed to reflect correct peak assignment.
- RI Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- PI Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.



L-W1-035/a-mi-10/00

5

Report Date: 11/20/01 15:55 Client: TNU-HANFORD B02-007 Work Order: 11343606001 Page: 1a RFW Batch Number: 0111L258

	Cust ID:	B13CT(	,	B13CT	)	B13CT0	)	SBLKJQ		SBLKJQ BS		
Sample Information	RFW#: Matrix: D.F.:	002 WATER 1.0	00	002 MS WATER 1.(	00	002 MSD WATER 1.0	0	01LE1335-W WATER 1.0	0	01LE1335-M WATER 1.0	0	
	Units:	ug/I	J	ug/I	J	ug/L	1	ug/I		ug/L	•	
	Nitrobenzene-d5	85	*	71	*	73	*	86	*	80	8	
Surrogate	2-Fluorobiphenyl	80	*	67	ક	68	ક્ષ	78	ક	76	¥	
Recovery	p-Terphenyl-d14	103	૪	94	ક્ર	96	*	98	∛	89	*	
	Phenol-d5	83	*	69	ક	72	ક	59	*	75	⅋	
	2-Fluorophenol	79	¥	67	*	69	ક્ષ	77	ક	72	ક	
	2,4,6-Tribromophenol	78	ક્ર	72	ફ	79	8	83	¥	80	*	
****		========					=f1	2=======	=f1		=fl	=======f1
Phenol	·	10	U	66	¥	75	₹	10	U	77	¥	
bis(2-Chlore	oethyl)ether	10	Ŭ	23	U	23	U	10	U	10	U	
2-Chloropher	nol	10	U	68	ક	72	ક્ષ	10	U	75	ક્ષ	
1.3-Dichlord	benzene	10	U	23	Ū	23	U	10	σ	10	U	
1,4-Dichloro	obenzene	10	U	54	¥	50	ક્ર	10	U	61	*	
1,2-Dichlore	bbenzene	10	U	23	U	23	U	10	Ū	10	ប	
2-Methylpher	nol	10	U	23	Ü	23	U	10	U	10	U	
2.2'-oxybis	(1-Chloropropane)	10	U	23	U	23	U	10	U	10	U	
4-Methylpher	nol	10	Ū	23	Ū	23	U	10	U	10	U	
N-Nitroso-Di	-n-propylamine	10	U	65	₹	72	욷	10	U	75	왐	
Hexachloroet	hane	10	U	23	U	23	U	10	U	10	U	
Nitrobenzene		10	บ	23	U	23	U	10	U	10	Ū	
Isophorone_		10	U	23	Ŭ	23	IJ	10	U	10	U	
2-Nitropheno	phenol	10	U	23	U	23	U	10	U	10	U	
2,4-Dimethy	lphenol	10	U	23	Ų	23	U	10	U	10	Ū	
bis(2-chioro	oethoxy) methane	10	U	23	រា	23	U	10	U	10	Ü	
2,4-Dichlor	ophenol	10	U	23	Ū	23	U	10	U	10	U	
1,2,4~Trich]	lorobenzene	10	U	57	¥	56	왐	10	U	66	8	
Naphthalene_		10	U	23	Ū	23	U	10	U	10	Ū	
4-Chloroani	line	10	U	23	U	23	U	10	U	10	U	
Hexachlorobu	utadiene	10	U	23	U	23	U	10	U	10	Ū	
4-Chloro-3-	methylphenol	10	U	72	ક	77	ક્ર	10	U	82	ક	
2-Methylnaph	nthalene	10	U	23	Ų	23	U	10	U	10	Ū	
Hexachlorocy	clopentadiene	10	U	23	U	23	U	10	Ū	10	Ū	
2,4,6-Trich	lorophenol	10	Ū	23	U	23	Ū	10	บ	10	U	
2,4,5-Trich	lorophenol	25	U	57	Ū	57	Ū	25	Ü	25	U	
	of EPA CLP QC limits.							_ <del>-</del>	-		_	

23 U

23 U

23 U

23 U

23 TI

23 U

23 U

23 U

10 U

10 IJ

10 U

10 U

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10 U

Ū 10

10 U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

10 17

10 U

10 U

10 U

Indeno(1,2,3-cd)pyrene____

Dibenzo(a,h)anthracene____

Benzo(g,h,i)perylene____

Tributylphosphate_____

#### 1F

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

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1		ļ
B13CT0		ĺ

CLIENT SAMPLE NO.

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNU-HANFORD B02-007

Matrix: (soil/water) WATER Lab Sample ID: 0111L258-002

Sample wt/vol: 990 (g/mL) ML Lab File ID: All1714

Level: (low/med) LOW Date Received: 11/02/01

% Moisture: ____ decanted: (Y/N)__ Date Extracted: 11/06/01

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/17/01

Injection Volume: 2.0 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: __7.0

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	18.695	3	J
} 2.	UNKNOWN	22.054	4	J

### SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

SBLKJQ		

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNU-HANFORD B02-007

Matrix: (soil/water) WATER Lab Sample ID: 01LE1335-MB1

Sample wt/vol:  $\underline{1000}$  (g/mL)  $\underline{ML}$  Lab File ID:  $\underline{\underline{A111712}}$ 

Level: (low/med) LOW Date Received: 11/06/01

% Moisture: ____ decanted: (Y/N)__ Date Extracted: 11/06/01

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/17/01

Injection Volume: 2.0(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: __7.0

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Ω
		UNKNOWN UNKNOWN	11.269		J
j		i			

U BAHA From Metals WET Custody Transfer Record/Lab Work Request Page ______of____ Lionville Laboratory Use Only 0416258 FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS ALDI BO2-007 Client TNUL HAN FOUN Refrigerator # Liquid Est. Final Proj. Sampling Date #/Type Container Solid linid Project Contact/Phone # Volume Solid OI Lionville Laboratory Project Manager ____ ac _ SPEC Preservatives Del __570 TAT ORGANIC ANALYSES Post PCB Š REQUESTED 110-2-01 11-17-01 Date Rec'd Date Due Lionville Laboratory Use Only Matrix MATRIX QC CODES: 0624× Ac. C Lab Chosen Date Time 0 Matrix Client ID/Description 5240 S - Soil Collected Collected og. (V) SF - Sediment HH SO - Solid MS MSD St. - Sludge W - Water 10-29-0) 66-40 B13C83 D - OH A - Air 13 cTO n3hol 1500 DS - Drum Solids DL - Drum Liquids EP/TCLP Leachate Wi - Wipe X - Other F - Fish DATE/REVISIONS: Special Instructions: Lionville Laboratory Use Only MCTO 1. As Ba Cd. Cr. Pb. Se. Ag. Be. Cu. Ni. V. Zn Samples were:/ Tamper Registant Seel was: 1) Shipped — or IC () 2 ICCL, ICFL, ICANS, ICANOZ, ICPOY ILSOY 1) Present on Outer Hand Delivered ____ Package (v) or N 11-5-01 3 Canal OGZYX Add OGZYH + OGCSC ANGHI # ___/2___/ 2) Unbroken on Outer Package (Y or N 2) Ambient or Chilled 3) Present on Sample or N 3) Received in Good Condition (Y) or N 4) Unbroken on 4) Samoles Sample (V) or N Properly Preserved COC Record Present Discrepancies Between (Y) or N

	Relinquished by	Received by	Date	Time
	Fed Ep	Hend	11/2/01	0935
Į				

•	Relinquished	Received by	Date	Time
	WASTE	URI	GINAL	
		REW	RITTE	N

Samples Labels and COC Record? Y or 69 NOTES ---1235 7954 8545

Holding Times (Y) or N Upon Sample-Rec't

5) Received Within Cooler

Y or N Temp. _____

Inc.	C								В	B02-007-02 Page 1 of							
	Comp	Company Contact Telephone No.							Price Code Data			rneround					
200-CS-1 OU - QC S	amplin 200	200 East & West						SAF No. B02-007  Air Qualit			ity   45						
JGPC	Pield :	Loghook No. EL-15	51				Method of Ship Fed Ex	Paseni									
GCP4	Offsic	e Property No. A	620	Ch)	18		Bill of Lording	Air Bill	OSR	1							
<b>5</b>			HC2 or H28O4														
total activity associated with PT 1/-1-01 sample/samples. Special riandling and/or Storage			ples.		ssociated with PT 11-1-81		Type of Container	aGs*									
·		No. of Container(s)	1														
		Volume	40enL			<u></u>											
SAMPLE ANALYSIS				- <del>-</del> ·													
Matrix *	Sample Date	Sample Time															
WATER	10/29/01	2640	Х														
	<del>-</del>					<b>}</b>	_	<del> </del> -			<del> </del>						
					<del></del>	<u> </u>				<del> </del>		+					
Relinquished By/Removed From Date/Time COD Received By/Stored in Date/Time  Relinquished By/Removed From Date/Time  Date/Time  Date/Time  Received By/Stored in Date/Time  Date/Time  Date/Time  Received By/Stored in Date/Time  Date/Time						ored in Date/Time  ** Laboratory is to measure pH within 24 hours of sample receipt.  ** The BRC acknowledges the 48-hour holding time will not be met for Nitrate using EF ored in Date/Time (10)  ** The laboratory is to report Decame as a TIC if present in detectable quantities.											
						Samples atored in Ref.# A at the 3728  Shipping Facility on 10130101.											
Date/Time				_	00 <u>/ / .</u>	<b>د</b> است.	~ 1 .v. sp./b.	- 30. 17	RTI			ErEipsid VoVogention X-Other					
			Title		···			·			Dato/Time						
											-year Little	· (					
	200-CS-1 OU-QC S  CAL  STREMARKS  RT 11-1-01  Matrix *  WATER  Date/Time  Date/Time  Date/Time  Date/Time  Date/Time  Date/Time  Date/Time	Comp Comp Comp Comp Comp Comp Comp Comp	Company Confact Cearlock, CS  200-CS-1 OU - QC Samplin  200 East & West  Pield Loghook No. FZ - 15  GO2A  Offisite Property No. A  Type of Container  No. of Container  No. of Container  No. of Container  Volume  SAMPLE ANALYSIS  Matrix * Sample Date Sample Time  WATER 10/29/01 2640  Sign/Print Names  Date/Time Roserved By/Stored In Date  Date/Time COO Reserved By/Stored In Date  Date/Time Date/Time Reserved By/Stored In Date/Time Date/Time Reserved By/Stored In Date/Time Date/Time Reserved By/Stored In	Company Condact Cearlock, CS 372-96  200-CS-1 OU - QC Samplin  DEAT  Pield Loghook No. FL-1551  Offsite Property No. A  Offsite Property No. A  Preservation  Inc or 12804  Type of Container  No. of Container  N	Company Condact Coarlock, CS 372-9638  Sampling Location 200 East & West  Pickil Logbook No. FL-1551  COA X120  Offitte Property No. AD Correction 100 East & West  Preservation 110 Fickil Logbook No. FL-1551  COA X120  Offitte Property No. AD Correction 110 Fickil Logbook No. FL-1551  COA X120  Offitte Property No. AD Correction 110 Fickil Logbook No. FL-1551  COA X120  Offitte Property No. AD Correction 110 Fickil Property No. AD Correction 110 Fickil Property	Company Condact Courlook, CS 372-9638  Sampling Location 200 CS & West  COA 200 CS & West  Pickl Logbook No. EL - 1551  COA XL2002CHGR  Offsite Property No.  CF 10-1-51  Type of Container  No. of Container  No. of Container  Volume  VOA- 2590A (ICL): VOA 200 CS COR  No. of Container  No. of Container  Volume  VOA- 2590A (ICL): VOA 200 CS  Received By/Stored In Date/Time  Location  Sign/Print Names  Date/Time  Company Condact  Telephone No. 372-9638  COA XL2002CHGR  COA XL2002CHGR  VIA- 2590A (ICL): VOA 200 CS  Received By/Stored In Date/Time  ** Laboratory is to the Interview of the Interview is to	Company Confact Coarlock, CS 377-9638  Sampling Location 200 CS-1 OU - QC Samplin 200 Est & West  Field Logbook No. FL - 1551  COA XI 2002CHOR  Offside Property No. A  Offside Property No. A  SERVATION  Freezewation  Type of Container  No. of Container(s)  Volume  Volum	Company Contact Coarlock, CS 372-9638  TRENT, SI  200-CS-1 OU - QC Samplin  200-ES-1 OU - QC Samplin  Pleid Logbook No. EL - 155   COA Reflored of Side Fed Ex  Offisite Property No.   Company Condact Coarbook, CS Coarbook, CS Coarbook, CS Coarbook, CS Coarbook Coarbook, CS Coarbook Coa	Company Confact Controls, CS ST2-9638  Telephone Na. ST2-9638  Project Coopellandor TRENT, 81  Read Loghook No. EL-1551  COA X12002CHOR Reduced of Skigment Fod Ex  Offside Property No.  Offside Prop	Company Contact Controls, CS ST2-9638 TRENT, S Trice Code TRENT, S SAN No. SAN	Company Contact   Telephone No.   Triplet Coordinator   Trice Code   Triplet   Coordinator   Triplet   Coordinator   Triplet   Coordinator   Triplet   Tri						

Bechtel Hanfo	rd Inc.	C	HAIN OF CUST	TODY/S	AMPL	E ANAL	YSIS	REQU	EST			B02	2-007	-03	Page 1	of 1
Collector Watson, D/Bowers DL			any Contact rlock, CS			Project Co TRENT, S.	Pri	Price Code 7N			Data Turnaround					
Project Designation 200 Area Source Characteriza	ation 200-CS-1 OU - QC	Samplin 200	Sampling Location 200 East & West						SAF No. B02-007			Air Quality 🗍			45	Days
Ice Chest No.	OSPC		Logbook No. 1551		COA B20CS16	73C		Method of Fed Ex	Shipment	<u> </u>						
Shipped To TMA(RECRA)		Offsit	e Property No. AZ	120	BB	)		Ba of Lag	ling/Air Bi	No.	25	X	1	/_		
POSSIBLE SAMPLE HAZA Samples did not originate i radiological controlled are	. No		Preservation	HCl or H2SO4 to pH <2 Coo	Cool 4C	HNÓ3 to pH	H2SO4 t			NoOH 9 Cool	HNO	Hq OL	HCL or	12504 12 Coo	, 51	
total activity associated wit sample/samples. Special Handling and/or			Type of Container	aGs*	•G	aG	G			G		<del>75) (5</del>		100		
Special Manufing allows	otor age		No. of Container(s)	3 40mL	2 1000mL	1000mL	1 1000	nL 1000		l OmL	1000			mi.		
	<del> </del>		Volume	VOA - 8260A		See item (1) in	NOZAN			s - 9030	Ground			8260A	 	
	Sample anai	ysis		(TCL); VOA- 8260A (Add- On) (1- Propenol, Ethenol)	8270A (Add	Special Instructions.	353.1 Ammor 350.	Spec	أأسف		Gros	Beta	R260 O Pro	; VOA - A (Add- b) (I- pasol, usol)		
Sample No.	Matrix *	Sample Date	Sample Time													
B13CT0	WATER	10-31-01	1500		X	X	$\lambda$	X	λ	/			$\rightarrow$	F-1	XB	
10-10-10-10-10-10-10-10-10-10-10-10-10-1	1-01															
					<del> </del>	<del>                                     </del>	-				<del>                                     </del>	<del></del>	<del> </del>			
CHAIN OF POSSESSI		Sign/Pris			SPE	CIAL INSTR	UCTIO	NS					- <b>_</b>		1 <u> </u>	Matrix *
Relinquished By/Removed From Do Relinquished By/Removed From	200 DeterTime	Received By/Sto	\ 1 '	nde/Tigos G///T}(	_   ***	Laboratory is to a The BRC acknow The laboratory is	wledges th	se 48-hour hol	ding time will	not be a	met for 1	Nitrate	using ]	EPA me	thod 300.0.	8-Gell 28-Seliment
KUL ZA 3	728 11-1-1	XX Respirate Augustan	mp Thores		<b>তি</b> ()	ICP Metals - 60 Metals - 6010A	10A (Sup	ertrace) (Arse	nic, Baritan, C	Cadmiun	n, Chron	miam,	Lead, S	elenium	, Silver);	O-Oil A = Aste. SI-garde: 20-goliti
Relinquished by Dembyod (1920)	Date/Time	Received By Sto	D'en	ule/Time	(2)	IC Anions - 300.	.0 (Chiori	ide, Fluoride,	Nitrate, Nitrite	pper, Ni e, Phosp	shate, Su	macro diste);	nn, 2400 ; pH (V	;} /ater) - 5	0040	A-Air D8-Drom Solide DE-Drom Liquids
Relinguished By/REthoved From	ete/Time	35	Samples	stored	in Ref.	A at the	3728	3					Y=Zime Yg=Wipa L=Liquid			
Relinquished By/Removed From Date/Time Received By/Stored In D						Shipping Collector	Facilit not av	y on <u>i/)</u> railable to	relinguis)						VerVegetation 2000ag	
Relinquished By/Removed From	Date/Time	Received By/Sto	ored In E	ate/Time		on <u>                                    </u>	1_14	∑ for shi	pment.		RT	, K - 1 -	01			
LABORATORY Received SECTION				T)	itle									<u> </u>	ate/Time	
FINAL SAMPLE Disposal P DISPOSITION	Method					Dispo	need By				<u> </u>			J	Oste/Time	

BHI-EE-011 (10/99)



Client: TNU-HANFORD B02-007

LVL#: 0111L258

**SDG/SAF #:** H1569, H1576/B02-007

**W.O.** #: 11343-606-001-9999-00

**Date Received:** 11-02-2001

#### **GC/MS VOLATILE**

Two (2) water samples were collected on 10-29,31-2001.

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8260B for TCL Volatile target compounds on 11-08-2001.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. The cooler temperature upon receipt has been recorded on the chain-of-custody.
- 2. Samples were analyzed within required holding time.
- 3. Non-target compounds were not detected in the samples.
- 4. All surrogate recoveries were within EPA QC limits.
- 5. All matrix spike recoveries were within EPA QC limits.
- 6. All blank spike recoveries were within EPA QC limits.
- 7. The method blanks contained the common laboratory contaminant Methylene Chloride at a level less than 2x the CRQL.
- 8. Internal standard area and retention time criteria were met.
- 9. A spectral search was performed for Decane; however, it was not detected in the samples.
- 10. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

President

Lionville Laboratory Incorporated

som\group\data\voa\tnu-hanford\0111-258.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 0 pages.

# **GLOSSARY OF VOA DATA**

# **ABBREVIATIONS**

BS	202	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA		Not Applicable.
DF	**	Dilution Factor.
NR	<b>16</b> 1	Not Required.
SP, Z	=	Indicates Spiked Compound.



#### **GLOSSARY OF VOA DATA**

#### DATA QUALIFIERS

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D = Identifies all compounds identified in an analysis at a secondary dilution factor.
- i = Interference.
- NO = Result qualitatively confirmed but not able to quantify.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.



## TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

- MP Missed Peak: manually added peak not found by automatic quan program.
- PA Peak Assignment: quan report was changed to reflect correct peak assignment.
- RI Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- PI Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.



5

#### Lionville Laboratory, Inc.

Volatiles by GC/MS, HSL List

Report Date: 11/12/01 12:23 Client: TNU-HANFORD B02-007 RFW Batch Number: 0111L258 Work Order: 11343606001 Page: 1a

Cust ID: B13C83 B13CT0 B13CT0 B13CT0 **VBLKJS** VBLKJS BS Sample RFW#: 001 002 002 MS 002 MSD 01LVX487-MB1 01LVX487-MB1 Information Matrix: WATER WATER WATER WATER WATER WATER D.F.: 1.00 1.00 1.00 1.00 1.00 1.00 Units: uq/L uq/L uq/L ug/L ua/L uq/L Toluene-d8 100 ٠ 왐 옿 100 101 101 ¥ 97 앟 99 Ŷ Bromofluorobenzene r. ş. ş Surrogate 90 94 96 r Ş. 91 98 앛 1.2-Dichloroethane-d4 % ş. ž ş. Recovery 95 89 92 99 & 96 ٠ Chloromethane 10 10 U 10 10 10 17 Bromomethane 10 U 10 U 10 U 10 10 11 10 IJ Vinyl Chloride_____ 10 U 10 11 10 U 10 11 10 10 U Chloroethane____ 10 II 10 0 10 U 10 11 10 U 10 IJ Methylene Chloride_____ 6 В 7 B В R 9 8 В Acetone 10 U 10 U 10 U 10 10 11 10 U Carbon Disulfide_____ 5 II 5 U 5 U 5 U 5 IJ 5 IJ 1,1-Dichloroethene____ 5 U 85 * * 84 11 81 9 1,1-Dichloroethane____ 5 U 5 Ħ 5 5 U 1,2-Dichloroethene (total) 5 U 77 U 5 11 5 13 IJ Chloroform _____ 5 IJ U 5 IJ 5 5 IJ 1,2-Dichloroethane 5 IJ 5 IJ 5 U 5 Ħ 5 U 2-Butanone 10 Ħ 10 10 77 10 17 10 U 1 J 1,1,1-Trichloroethane 5 17 17 5 17 5 11 5 TT U Carbon Tetrachloride____ IJ IJ 5 U 5 5 U Bromodichloromethane____ 5 U 5 U Ħ 5 IJ IJ U 1,2-Dichloropropane_____ 5 U U 5 U 5 11 5 IJ cis-1,3-Dichloropropene____ 5 5 U U 5 U 5 0 5 IJ Trichloroethene____ 5 U U 101 101 뫛 2 J 95 ş Dibromochloromethane____ U TT U 5 IJ 5 II 5 Ħ 1,1,2-Trichloroethane 5 7.7 U 5 П 5 U 5 U Benzene 5 Ħ 5 IJ 89 ş. 92 왐 5 U 89 ¥ Trans-1,3-Dichloropropene____ U Ħ U 5 U 5 IJ 5 IJ Bromoform 5 11 5 IJ 5 U 5 U 5 U IJ 4-Methyl-2-pentanone____ 10 U 10 10 IJ 10 10 U 10 TT 2-Hexanone 10 U 10 0 10 U 10 II 10 U 1.0 U Tetrachloroethene____ 5 U U U U 5 5 U 1,1,2,2-Tetrachloroethane____ IJ 5 U 5 U 5 U 5 17 IJ Toluene 5 U 5 II 100 ¥ 99 ¥ U 94 ¥

*= Outside of EPA CLP QC limits.

RFW Batch Number: 0	111L258 Clie	ent: TNU-1	LANFO	RD B02-00	7	Work C	rder	: 11343606	001	Page: 1b	<u>)</u>		
	Cust ID:	B13C83		B13CT0		B13CT0	)	B13CT0		vblkjs		VBLKJS BS	
	RFW#:	001		002		002 MS	i	002 MSD	)	01LVX487-M	<b>B</b> 1	01LVX487~	MB1
Chlorobenzene		5	U	5	U	99	용	100	8	5	U	93	<del></del>
Ethylbenzene		5	U	5	U	5	Ŋ	5	U	5	U	5	U
Styrene		5	U	5	U	5	U	5	U	5	U	5	U
Xylene (total)		5	U	5	U	5	Ū	5	U	5	U	5	U

Xylene (total)
*= Outside of EPA CLP QC limits.

Lionville Laboratory Use Only

Client TNU. HAN FOUN

Est. Final Proj. Sampling Date _

Project Contact/Phone # _____

Lab

1001

Lionville Laboratory Project Manager ____

11-2-01

1102 13 13 CTO

Received

Date

11/2/01

B13C83

Date Due

0416258

ac SPEC

Date Rec'd _

SE - Sediment SO - Solid

St. - Studge

W - Water

DS - Drum Solids DL - Drum Liquids EP/TCLP Leachate WI - Wice X - Other F - Fish

Special Instructions:

Relinquished

O - Oil A - Air

MATRIX

CODES:

S Soil

Bechtel Hanfo	rd Inc.	C	HAIN OF CUST	REQUI	EST	В	02-007-02	Page 1	of 1					
Collector Thomas, G/Watson, D			Company Contact Telephone No.  Cearlock, CS 372-9638 Project Coordinator TRENT, SJ Price Code								215	Data Turnaround		
Project Designation 200 Area Source Characteriza	ation 200-CS-1 OU - QC	Samplin 200	ling Location East & West	· · · · · · · · · · · · · · · · · · ·				SAF No. B02-007		Air Quali	y C	45)	Days 1	
Ice Chest No. See	DOPC	Field 1	Logback No. EZ-15	51	COA XL20020	HGR		Method of Fed Ex	Shipment					
Shipped To	RECPA	Offsit	e Property No.	520	9519	2		Bill of L	ing/Air Bill	<b>106</b> PC	1			
POSSIBLE SAMPLE HAZA Samples did not originate in radiological controlled area	n L. No	1	Preservation	HCl or H2SO4 to pH <2 Coo	<b>4</b> 2 T \									
total activity associated with sample/samples. Special riangling and/or		•	Type of Container	aGs*										
Special Handing and of	D-01 #60		No. of Container(s)	l										
			Volume	40mL	<del></del>								}	
	SAMPLE ANAL	YSIS		VOA - 8260A (PCL); VOA - 8260A (Add- On) (1- Propunol, Ethanol)										
Sample No.	Matrix *	Sample Date	Sample Time											
B13C83	WATER	10/29/01	2640	У										
				}		+	,	_ -			<del>-  </del>	<u> </u>		
					* <u> </u>	-		_	<del></del>		<del></del>	<del> </del>		
CHAIN OF POSSESSIO	) ON	Sign/Prin	t Names											
Relinquished By/Removed From DT WISON GRUP Relinquished By/Removed From LULA 377 Relinquished By/Reploved From	Dute/Time OF	Received By/Stor	red In Day 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	te/Time	5	The laboratory is t	neasure pl ledges the to report I	I within 24 ho : 48-hour hold Decune as a TI	ng time will n C if present in	ot be met for Nitro detectable quantit	ate using EPA me ties.	thod 300.0.	Matrix *  2=8cil 38=6cdiment 80=sclid 33=3todge W = Weter 0=03i A=Air 100=Drum Sclids 101=Drum Liquids	
Relinquished By/Removed From Date/Time Received By/Stored In Date/Time II/2/01 07:35 Relinquished By/Removed From Date/Time Received By/Stored In Date/Time						Samples stored in Ket.# 111 at the 3728								
Relinquished By/Removed From	Date/Time	Received By/Stor	red In Da	ste/Time	7					•				
LABORATORY Received B SECTION	у	<del></del>	<del></del>	Title	<u> </u>	· <del></del> -		<del></del>			ſ	Date/Time	<u></u>	
FINAL SAMPLE Disposal M DISPOSITION	lethod			<del></del>	·	Dispos	sed By		<del></del>		1	Date/Time		
718 75 044 (4000)			<del></del>											

Bechtel Hanfor	d Inc.	CI	HAIN OF CUST	REQUES	<u>T</u>		DU.	2-007-03	1.40	<u>-</u>				
Collector Watson, D/Bowers DL			Ceanock, CS 3/2-9638 IRENT, SJ									rnaround		
Project Designation 200 Area Source Characterizat	tion 200-CS-1 OU - QC S	Sampli Samplin 200	ing Location East & West	SAF No. B02-007	A	Air Quality []				Days				
Ice Chest No. SE	OSPC		ogbook No. 551		COA B20CS16	573C		Method of Shipment Fed Ex						
Shipped To TMA(RECRA)		Offsite	Property No. AZ	り20	රැලි	7		Bill of Lading	Air Bill No	25	S)			
POSSIBLE SAMPLE HAZAI Samples did not originate in radiological controlled area total activity associated with sample/samples.	. No		Preservation	HCl or H2SO4 to pH <2 Coo	Cool 4C	HNÓ3 to pH <2	H2SO41	140	ZnAc+NaOi to pH >9 Coo	HNC	He off	HCLor H2SO	ار ۱۵	
sample/samples. Special Handling and/or			Type of Container	3	2	aG	1		#G	1	25	440.	1	
			No. of Container(s)	40mL	1000mL	1000mL	1000		500mL	+-	omi.	40mL	ļ	ļ
			Volume											
	Sample anal	ysis		VOA - 8260A (PCL); VOA - 8260A (Add- Ob) (1- Propenol, Etherol)	Semi-VOA - 8270A (Add On) (Tributy phosphate)	i- Special Instructions.	NO2/N 3.53.1 Ammo 350.	; Special na Instructions	Sulfides - 903		Alpha; os Bets	VOA #260A (TCL); VOA #266A (Add- Ch) (I- Prepunci, Rhanci)	. ]	
Sample No.	Matrix *	Sample Date	Sample Time						{					
B13CT0	WATER	10-31-01	1500	X	X	X	$\lambda$	Х	У			-x-A	W	
900 p-3	/~0/													
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CHAIN OF POSSESSIO	li	Sign/Prin	t Names	<u> </u>	CDE	CIAL INSTR	LICETO		<u>.L</u>			1	<u> </u>	1 260 - 2
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